MONTHLY

JOURNAL OF AGRICULTURE.

VOL. II. JANUARY, 1847. NO. 7.

MEMOIR OF ELI WHITNEY,

INVENTOR OF THE COTTON-GIN.

The Farmer of Mount Vernon scarcely did full justice to the benefactors of the Agriculture of a country, when he declared, in respect of that most important of all national concerns, "I know of no pursuit in which more real important service can be rendered to any country, than by *improving its Agriculture.*" A yet higher and juster estimate of the value of such services was pronounced by the celebrated Grecian warrior and historian, in saying that he considered Agriculture as the "nursing mother of all the arts." "Where it succeeds," he added, "the arts all thrive; but where the earth is suffered to be uncultivated, there the arts all perish." It is but too true that men—especially public men, who have the public interests in charge—rarely reflect on the absolute connection between Agriculture and all other pursuits, and how positively all of them depend for their prosperity on the prosperity of agricultural labor. Like the blessings of good health, and the vital importance of the air we breathe, in the daily enjoyment of them we forget that they are absolutely indispensable not only to the comforts of life, but to life itself.

What, it may truly be asked, would soon be the condition of every class of society, and every human employment, were the implements of husbandry to be lost, and with them all knowledge of the art of cultivating the earth, from which the multiplied and various fruits of civilization spring as directly as the ripe corn itself springs from the seed? Who does not see that man, thrown back into a state of nature, to contend for very life against the birds of the air and the beasts of the forest, famine would soon stalk abroad, and ignorance and barbarism resume their empire over the earth. Does it not, then, follow that he who most improves the implements and the knowledge of this great art—which lies at the base of all others, as the pedestal at the base of the monument—by thus multiplying the means of subsistence, so far releases the mind from sordid and corroding cares, opens to genius the field for useful invention, and entitles himself to the highest consideration and reward that a discerning people have it in their power to bestow! Nay, in what country, it may be asked, have any arts long flourished, where those by whose genius and labors they have been most advanced have been recompensed with neglect and ingratitude? Yet, shame to say, has not that been too often the fate, in our country, of those plain, unpretending men

in civil life, whose inventions have brought landed capital into profitable activity, and created for manufacturing and commercial enterprise their greatest facilities?

Beyond the precarious, ill-secured and insufficient immunities of a patent-right —which, if worth the expense of procuring, is sure to be set upon by pirates, as the eagle is assailed by the meanest of the feathered race—we may demand to know what honorary distinction or recompense has been voted by the people or bestowed by the Government of the United States on those whose labor-saving contrivances have multiplied the products of agricultural industry, and facilitated the exchanges of internal and of foreign commerce, and the spread of knowledge? Where are the votes of thanks, the medals and the pensions voted to authors and investigators in the natural and useful sciences? or to those patriots who assisted in laying the foundation of our great civil structure? or to those again, few and far between, who have gathered up and luminously arranged the scattered and fading lights of our national history? Look at PRESCOTT, for example, who, though physically blind, has shed such a blaze of light on the *first* "Conquest of Mexico," reflecting in his history all the incidents of that great event, from its inception to its close, as faithfully as the image is reflected by the mirror, and establishing for his country another, if not her highest, claim to eminent rank in the republic of letters! Yet may it not be doubted whether his name would be allowed to find a place in any resolution of Congressional thanks, so freely voted to the youngest warrior whom fortune may have favored with a chance to flesh his maiden sword in Mexican blood! And are such to be forever our proofs of popular discernment—such our manifestations of republican justice? But to the subject of our memoir, if only to show that one pen, at least, is ready, however inadequately, to render the tribute which is due to the memory of a countryman whom history will rank, for his inventive talents, along with poor heart-broken FITCH, and RUMSEY, and CLINTON and FULTON, all as having added incalculable measure to the wealth and power of their country.

ELI WHITNEY was born December 8th, 1765, in Westborough, Massachusetts, where, and in the same house, some of the family still reside. His parents belonged to that middle class which in New-England, above all countries, constitutes the mass—the bone and sinews of society. By the habitual diligence and frugality which may be said to characterize the people of that venerable Commonwealth, they managed to provide well for their family. It is from that class that have arisen most of those in New-England who have attained high eminence and usefulness; nor, as it has been well said, is any other situation in society so favorable to the early formation of those habits of economy, both of time and of money, which, when carried forward into the study of the scholar, or the various fields of active enterprise, afford the surest pledge of success. Thus it is that those who have attended the annual Fairs in New-England must have observed, with admiration, that the plows and carts contending, always with ox teams, are usually managed by their owners in person and unassisted—being every-day working farmers; such as compose also their Committees of Judges, who often draw up, on the spur of the occasion, well-written and lucid reports. From Secretary Pickering to Senators Webster and Davis, most of their most distinguished men have been reared in the performance of all the practical operations of New-England husbandry.

As biography would lose much of its entertainment, as well as its usefulness, if it did not relate incidents in themselves trivial, but which serve at once to show or to confirm the youthful bent of the character, we shall accordingly re-

peat here what has been said of Whitney's earliest indications of mechanical genius—premising, however, that we must otherwise confine this notice chiefly to the bearing of his great invention, the *cotton-gin*, on the *interests of Agriculture*. To follow him, pleasing as the task might be, into all the diversified walks of mechanical ingenuity, would be wandering too much beyond the limits of agricultural biography, to which we are restricted. Even thus far, pleasing as is the duty, we could not indulge, to the exclusion of more practical matter, were it not to give assurance to the votaries of the plow that here, at least, if nowhere else, a Register shall always be open, where justice may be done to those real benefactors of their race to whom the more solid rewards of Government are denied by the wise policy of enlightened legislators, *faithfully* representing a discerning and—alas! may it now be added, without the smallest spice of party spirit?—a *warlike people!*

Of Whitney's early passion for mechanical employments, his sister gives the following account: "Our father had a workshop, and sometimes made wheels, of different kinds, and chairs. He had a variety of tools, and a lathe for turning chair-posts. This gave my brother an opportunity of learning the use of tools when very young. He lost no time; but, as soon as he could handle tools, he was always making something in the shop, and seemed not to like working on the farm. On a time, after the death of our mother, when our father had been absent from home two or three days, on his return he inquired of the housekeeper what the boys had been doing? She told him what B. and J. had been about. 'But what has Eli been doing?' said he. She replied, 'He has been making a fiddle.' 'Ah!' added he, despondingly, 'I fear Eli will have to take his portion in fiddles.' He was at this time about twelve years old. His sister adds that this fiddle was finished throughout like a common violin, and made tolerably good music. It was examined by many persons, and all pronounced it to be a remarkable piece of work for such a boy to perform. From this time he was employed to repair violins, and had many nice jobs, which were always executed to the entire satisfaction, and often to the astonishment, of his customers. His father's watch being the greatest piece of mechanism that had yet presented itself to his observation, he was extremely desirous of examining its interior construction, but was not permitted to do so. One Sunday morning, observing that his father was going to meeting, and would leave at home the wonderful little machine, he immediately feigned illness as an apology for not going to church. As soon as the family were out of sight, he flew to the room where the watch hung, and, taking it down, he was so delighted with its motions that he took it all in pieces before he thought of the consequences of his rash deed; for his father was a stern parent, and punishment would have been the reward of his idle curiosity, had the mischief been detected. He, however, put the work all so neatly together that his father never discovered his audacity until he himself told him, many years afterward."

Whitney lost his mother at an early age, and, when he was thirteen years old, his father married a second time. His step-mother, among her articles of furniture, had a handsome set of table-knives she valued very highly, which our young mechanic observing, said to her, "I could make as good ones, if I had tools; and I could make the necessary tools, if I had a few common tools to make them with." His step-mother thought he was deriding her, and was much displeased; but it so happened, not long afterward, that one of the knives got broken, and he made one exactly like it in every respect, except the stamp on the blade. This

he would likewise have executed, had not the tools required been too expensive for his slender resources.

When Whitney was fifteen or sixteen years of age, he suggested to his father an enterprise, which was an earnest of the similar undertakings in which he engaged on a far greater scale in later life. That being the time of the Revolutionary War, nails were in great demand, and bore a high price. At that period, nails were made chiefly by hand, with little aid from machinery. Young Whitney proposed to his father to procure him a few tools, and to permit him to set up the manufacture. His father consented, and he went steadily to work, and suffered nothing to divert him from his task, until his day's work was completed. By extraordinary diligence, he gained time to make tools for his own use, and to put in knife-blades, and to perform many other curious little jobs, which exceeded the skill of the country artisans. At this laborious occupation the enterprising boy wrought alone, with great success, and with much profit to his father, for two winters, pursuing the ordinary labors of the farm during the summers. At this time he devised a plan for enlarging his business and increasing his profits. He whispered his scheme to his sister, with strong injunctions of secrecy; and, requesting leave of his father to go to a neighboring town, without specifying his object, he set out on horseback in quest of a fellow laborer. Not finding one so easily as he had anticipated, he proceeded from town to town, with a perseverance which was always a strong trait of his character, until, at the distance of forty miles from home, he found such a workman as he desired. He also made his journey subservient to his improvement in mechanical skill, for he called at every workshop on his way, and gleaned all the information he could respecting the mechanic arts.

In respect to his proficiency in learning while young, we are informed that he early manifested a fondness for figures, and an uncommon aptitude for arithmetical calculations, though in the other rudiments of education he was not particularly distinguished. Yet, at the age of fourteen, he had acquired so much general information as to be regarded, on this account, as well as on account of his mechanical skill, a very remarkable boy.

From the age of nineteen, young Whitney conceived the idea of obtaining a liberal education; but, being warmly opposed by his step-mother, he was unable to procure the decided consent of his father until he had reached the age of twenty-three years. But, partly by the avails of his manual labor, and partly by teaching a village school, he had been so far able to surmount the obstacles thrown in his way, that he had prepared himself for the Freshman class in Yale College, which he entered in May, 1789. An intelligent friend and neighbor of the family helped to dissuade his father from sending him to college, observing that "it was a pity such a fine mechanical genius as his should be wasted;" but he was unable to comprehend how a liberal education, by enlarging his intellectual powers and expanding his genius, would so much exalt those powers and perfect that genius as to place their possessor among the Arkwrights of the age, while, without such means of cultivation, he might have been only an ingenious millwright or blacksmith. While a schoolmaster, the mechanic would often usurp the place of the teacher; and the mind, too aspiring for such a sphere, was wandering off in pursuit of perpetual motion. While at home in the month of July, 1788, making arrangements to go to New-Haven, for the purpose of entering college, he was seized with a violent fever attended by a severe cough, which threatened to terminate his life. At length the disease centered in one of his limbs. A pain-

ful swelling, extending to the bone, ensued, which was finally relieved by surgical operation. After his recovery, he went to Durham, in Connecticut, and finished his preparation for college, under the care of that eminent scholar, Rev. Dr. Goodrich. As we are soon to accompany Mr. Whitney beyond the sphere of his domestic relations, we may mention here that he finished his collegiate education with little expense to his father. His last college bills were indeed paid by him, but the money was considered as a loan, and for it the son gave his note, which he afterward duly canceled. After the decease of his father, he took an active part in the settlement of the estate, but generously relinquished all his patrimony for the benefit of the other members of the family.

The propensity of Mr. Whitney to mechanical inventions and occupations was frequently apparent during his residence at college. On a particular occasion, one of the tutors, happening to mention some interesting philosophical experiment, regretted that he could not exhibit it to his pupils, because the apparatus was out of order, and must be sent abroad to be repaired. Mr. Whitney proposed to undertake this task, and performed it greatly to the satisfaction of the Faculty of the college.

A carpenter being at work upon one of the buildings of the gentleman with whom Mr. Whitney boarded, the latter begged permission to use his tools during the intervals of study; but the mechanic, being a man of careful habits, was unwilling to trust them with a student, and it was only after the gentleman of the house had become responsible for all damages, that he would grant the permission. But Mr. Whitney had no sooner commenced his operations, than the carpenter was surprised at his dexterity, and exclaimed, "There was one good mechanic spoiled when you went to college."

Soon after Mr. Whitney took his degree, in the autumn of 1792, he entered into an engagement with a Mr. B. of Georgia, to reside in his family as a private teacher. On his way thither, he was so fortunate as to have the company of Mrs. Greene, the widow of Gen. Greene, who, with her family, was returning to Savannah, after spending the summer at the North. At that time it was deemed unsafe to travel through our country without having had the small-pox, and accordingly Mr. W. prepared himself for the excursion by procuring inoculation while in New-York. As soon as he was sufficiently recovered, the party set sail for Savannah. As his health was not fully reëstablished, Mrs. Greene kindly invited him to go with the family to her residence at Mulberry Grove, near Savannah, and remain until he was recruited. The invitation was accepted; but, lest he should not yet have lost all power of communicating that dreadful disease, Mrs. Greene had white flags (the meaning of which was well understood) hoisted at the landing, and at all the avenues leading to the house. As a requital for her hospitality, her guest procured the virus and inoculated all the servants of the household, more than fifty in number, and carried them safely through the disorder.

Mr. Whitney had scarcely set his foot in Georgia before he was met by a disappointment, which was an earnest of that long series of adverse events which, with scarcely an exception, attended all his future negotiations in the same State. On his arrival, he was informed that Mr. B. had employed another teacher, leaving Whitney entirely without resources, or friends, except those whom he had made in the family of Gen. Greene. In these benevolent people, however, his case excited much interest, and Mrs. Greene kindly said to him: "My young friend, you propose studying the law; make my house your home, your room

your castle, and there pursue what studies you please." He accordingly commenced the study of law under that hospitable roof.

And here may we not pause and turn aside for a moment to remark what a field lies open for some man of capacity and generous temper to do credit to his country by sketching the portraits of eminent women of the Southern States—no, not exactly eminent, but whose noble deeds and dispositions would have gained eminence for any *man* in any age in which courage, humanity and high moral bearing under adversity have been esteemed worthy of cotemporary honor or historical renown.

The annals neither of our Revolutionary or subsequent times will ever have been filled up with anything like fullness or fidelity, until they shall have been made to relate at least the most conspicuous of the numberless instances of devoted heroism, of unshrinking fortitude and unfailing humanity displayed by high-bred Southern women, under the most trying bereavements and vicissitudes of the war—a war which seemed to reserve its fiercest rage for that devoted region. Their ready sacrifices of property—their ministerings with equal readiness to the wants and the sickness of friend and foe—of the soldier and the slave—such as should carry down their names, with Mrs. Greene s, to posterity, along with the most illustrious matrons of Greece or Rome. Who, let us ask, in the name of justice and patriotism, will take up this too long neglected task of chivalry and gratitude? But, to return to our narrative.

Mrs. Greene was engaged in a piece of embroidery in which she employed a peculiar kind of frame called a *tambour*. She complained that it was badly constructed, and that it tore the delicate threads of her work. Mr. Whitney, eager for an opportunity to oblige his hostess, set himself at work and speedily produced a tambour-frame made on a plan entirely new, which he presented to her. Mrs. Greene and her family were greatly delighted with it, and thought it a wonderful proof of ingenuity.

How curious would appear a recital of a series of extraordinary *accidents*, as they are termed, which have seemed to be turning pivots in the lives of eminent men, lifting them at once from obscurity to distinction, and leading perhaps more frequently to fortune, in military life, but sometimes to extraordinary mechanical inventions and profound discoveries in science, and sometimes influencing even the industry and the fate of whole nations. Every reader is familiar with the alleged *pomological* origin of the Newtonian philosophy, by the light of which we have lately seen one of his great disciples indicate, without looking for it, the existence and exact locality of a hitherto undiscovered planet, in a particular portion of immeasurable space, at a distance of one hundred thousand millions of miles!

All such events, however, which, from their suddenness and obscure or concealed causes, we are prompted, in our short-sightedness, to call accidents, or miracles, are really in the eye of philosophy but so many links, all of equal dependence on each other, in an unbroken chain of moral and physical causes and effects, which become causes in their turn, from the beginning of time to the present hour; and being, as all of them must be, the result of adequate influences to produce them—could not at the instant have happened otherwise than they have done. Thus it is under the same universal law that the sun goeth down in the west and the autumn leaf falleth to the ground. Thus it is, too, in the scheme of Providence, that nations tempered in the fire of adversity, rise under the auspices of good and wise counselors to prosperity and

greatness—until, intoxicated with power, they become demoralized, and degenerate, and cruel, and finally bow submissively to the rule of some upstart usurper, prepared again by Providence to govern and to punish those who had not virtue to govern themselves. *Quisque suos patimur manes.* After all, who cannot perceive that the greater or less perfection in all social arrangements and systems of government, consists in their presenting, or not, motives adequate to the insurance of virtuous deeds, and actions most conformable to the general weal? Hence the policy as well as the obligation which rests on all nations, and especially on republics, to see that the laws offer adequate incentives to patriotism, and that, above all things, reliable security and reward be held out to inventors and discoverers in the sciences and in useful branches of national industry. Without security there will not long be any industry or invention. No man will freely exercise his mental powers unless he be well convinced that he will be allowed to reap all the advantages accruing from his skill or genius, no more than the merchant will invest his capital in securities tainted with the least odor of suspicion. The inventions of such men as Bogardus and Whitney constitute their legitimate *property;* and a most sacred and honorable species of property it is; and it has been well observed, that if, owing to the weakness or ignorance of Government, the security of property or of inventions be materially impaired, all sorts of industrious undertakings that do not promise *immediate* return, would be immediately abandoned. The want, in such cases, of adequate security and reward to individuals, is in truth one of the greatest of public calamities. In their absence we should soon find nothing but the most abject poverty and barbarism; and supposing other things equal, the wealth and civilization of nations would be pretty nearly proportioned to the security of property they enjoy and the reward they bestow on scientific and distinguished benefactors of industrial pursuits and men of eminent virtue in civil trusts. Every other circumstance conducive to the advancement of industry may exist in a country, but without security to property and to inventions these will be of no material service. A high degree of security and rewards proportioned to the usefulness of inventors and the integrity of public service will compensate for many disadvantages in the condition and circumstances of a nation, but nothing can make up for the want of these. They constitute, in a word, the *sine qua non* of every species of prosperity.

We are now at that point in our narrative where one of those prominent and proximate circumstances usually denominated accidents was to put in immediate play the mechanical genius of Eli Whitney for a new combination of mechanical power, that was destined to revolutionize not merely the agricultural industry of our own country, but, in coöperation with the subsequent invention of ARKWRIGHT, of kindred genius, was to influence the manufacturing, commercial and money power of the whole universe.

Not long afterward a large party of gentlemen came from Augusta and the Upper country, to visit the family of Gen. Greene, consisting principally of officers who had served under the General in the Revolutionary army. Among the number were Major Bremen, Major Forsyth, and Major Pendleton. They fell into conversation upon the state of Agriculture among them, and expressed great regret that there was no means of cleaning the green seed cotton, or separating it from its seed, since all the lands which were unsuitable for the cultivation of rice would yield large crops of cotton. But until ingenuity could devise some machine which would greatly facilitate the process of cleaning, it was in vain

to think of raising cotton for market. Separating one pound of the clean staple from the seed was a day's work for a woman; but the time usually devoted to picking cotton was the evening, after the labor of the field was over. Then the slaves, men, women and children, were collected in circles with one whose duty it was to rouse the dozing and quicken the indolent. While the company were engaged in this conversation, "Gentlemen, (said Mrs. Greene,) apply to my young friend, Mr. Whitney—he can make anything." Upon which she conducted them into a neighboring room, and showed them her tambour frame, and a number of toys which Mr. W. had made or repaired for the children. She then introduced the gentlemen to Whitney himself, extolling his genius and commending him to their notice and friendship. He modestly disclaimed all pretensions to mechanical genius; and when they named their subject, he replied that he had never seen either cotton or cotton seed in his life. Mrs. G. said to one of the gentlemen, "I have accomplished my aim. Mr. Whitney is a very deserving young man, and to bring him into notice was my object. The interest which our friends now feel for him will, I hope, lead to his getting some employment to enable him to prosecute the study of the law."

But a new turn that no one of the company dreamed of, had been given to Mr. Whitney's views. It being out of season for cotton in the seed, he went to Savannah and searched among the warehouses and boats, until he found a small parcel of it. This he carried home, and communicated his intentions to Mr. Miller, who warmly encouraged him, and assigned him a room in the basement of the house, where he set himself at work with such rude materials and instruments as a Georgia plantation afforded. With these resources, however, he made tools better suited to his purpose, and drew his own wire, (of which the teeth of the earliest gins were made,) an article which was not at that time to be found in the market of Savannah. Mrs. Greene and Mr. Miller were the only persons ever admitted to his workshop, and the only persons who knew in what way he was employing himself. The many hours he spent in his mysterious pursuits afforded matter of great curiosity and often of raillery to the younger members of the family. Near the close of the winter, the machine was so nearly completed as to leave no doubt of its success.

Mrs. Greene was eager to communicate to her numerous friends the knowledge of this important invention, peculiarly important at that time, because then the market was glutted with all those articles which were suited to the climate and soil of Georgia, and nothing could be found to give occupation to the negroes and support to the white inhabitants. This opened suddenly to the planters boundless resources of wealth, and rendered the occupations of the slaves less unhealthy and laborious than they had been before.

Mrs. Greene, therefore, invited to her house gentlemen from different parts of the State, and on the first day after they had assembled, she conducted them to a temporary building, which had been erected for the machine, and they saw with astonishment and delight, that more cotton could be separated from the seed in one day, by the labor of a single hand, than could be done in the usual manner in the space of many months.

Mr. Whitney might now have indulged in bright reveries of fortune and of fame; but we shall have various opportunities of seeing that he tempered his inventive genius with an unusual share of the calm, considerate qualities of the financier. Although urged by his friends to secure a patent, and devote himself to the manufacture and introduction of his machines, he coolly replied, that

on account of the great expense and trouble which always attend the introduction of a new invention, and the difficulty of enforcing a law in favor of patentees, in opposition to the individual interests of so large a number of persons as would be concerned in the culture of this article, it was with great reluctance that he should consent to relinquish the hopes of a lucrative profession, for which he had been destined, with an expectation of indemnity either from the justice or the gratitude of his countrymen, even should the invention answer the most sanguine anticipations of his friends.

The individual who contributed most to incite him to persevere in the undertaking, was *Phineas Miller*, Esq. Mr. Miller was a native of Connecticut, and a graduate of Yale College. Like Mr. Whitney, soon after he had completed his education at college, he came to Georgia as a private teacher, in the family of Gen. Greene; and after the decease of the General, he became the husband of Mrs. Greene. He had qualified himself for the profession of law, and was a gentleman of cultivated mind and superior talents; but he was of an ardent temperament, and therefore well fitted to enter with zeal into the views which the genius of his friend had laid open to him. He had also considerable funds at command, and proposed to Mr. Whitney to become his joint adventurer, and to be at the whole expense of maturing the invention until it should be patented. If the machine should succeed in its intended operation, the parties agreed, under legal formalities, "that the profits and advantages arising therefrom, as well as all privileges and emoluments to be derived from patenting, making, vending, and working the same, should be mutually and equally shared between them." This instrument bears date May 27, 1793, and immediately afterward they commenced business under the firm of *Miller & Whitney*.

An invention so important to the agricultural interest, (and, as has proved, to every department of human industry,) could not long remain a secret. The knowledge of it soon spread through the State, and so great was the excitement on the subject, that multitudes of persons came from all quarters of the State to see the machine; but it was not deemed safe to gratify their curiosity until the patent-right had been secured. But so determined were some of the populace to possess this treasure, that neither law nor justice could restrain them: they broke open the building by night and carried off the machine. In this way the public became possessed of the invention; and before Mr. Whitney could complete his model and secure his patent, a number of machines were in successful operation, constructed with some slight deviation from the original, with the hope of evading the penalty for violating the patent-right.

As soon as the copartnership of Miller & Whitney was formed, Mr. Whitney repaired to Connecticut, where, as far as possible, he was to perfect the machine, obtain a patent, and manufacture and ship for Georgia such a number of machines as would supply the demand.

Such is the history of one of the most important on the list of human inventions, taken, in great part, from a Memoir which traces to its close the useful and instructive life of a man as distinguished and admirable for his uprightness and fortitude under some of the severest trials to which human nature can be subjected, as for the beneficent tendency of his genius. The narrative to which we refer relates interesting particulars of Whitney's connection with the Government as the inventor of important improvements in the manufacture of fire-arms, in which he continued through life to be employed. But of all employments, that is the least congenial with the great national concern to which this

Journal is exclusively dedicated, and one which by every wise and provident Government should be fostered first, and above all others.

But for Whitney's invention of the cotton-gin, Arkwright's spinning jenny, and other improvements in cotton manufacturing machinery, as well as the whole cotton region of our Union would have been comparatively uncalled for and valueless. This ingenious but unfortunate artist, says SEABROOK, in his comprehensive and classical Essay on Cotton, by his machine doubled the wealth and employment of his countrymen; while Judge WILLIAM JOHNSON, of South Carolina, in deciding one of the numberless suits which Whitney was compelled, with infinite cost and vexation to institute for violation of his patent, declared: "If we should assert that the benefits of this invention exceed $100,000,000, we can prove the assertion by correct calculation." But painful and mortifying would be the task, even if we had room, of enumerating here the piracies and persecutions he encountered. Instead of proving, as such an invention would have done, under any despotism of the Old World, a source of unbounded wealth, and title to enduring honors at the hands of the people and the Government; it seems, by the fuller narrative before us, to have brought down upon him a series of difficulties, and even of derogatory and groundless suspicions and charges, which remind the reader of the heart-sickening train of calamities that stuck, like the poisoned shirt of Nessus, to the unfortunate discoverer of the philosopher's stone, as related in the celebrated romance of St. Leon.

So numerous, so protracted, so expensive and harassing, were these suits for violations of his rights, violations that, especially in Georgia, found too much encouragement in the selfishness of a community that should have promptly lent him their sympathy and support, that Hon. S. M. HOPKINS, a gentleman of much experience in the profession of the law, who was well acquainted with Mr. Whitney's affairs in the South, and sometimes acted as his legal adviser, observes, in a letter, that in all his experience in the thorny profession of the law, he had never seen such a case of perseverance, under such persecution, "nor," he adds, "do I believe that I ever knew any other man who would have met them with equal coolness and firmness, or who would finally have obtained even the partial success which he did. He always called on me in New-York on his way South, when going to attend his endless trials, and to meet the mischievous contrivances of men who seemed inexhaustible in their resources of evil. Even now, after thirty years, my head aches to recollect his narratives of new trials, fresh disappointments and accumulated wrongs."

But our limits admonish us to turn from the story of these accumulated wrongs to a useful citizen, which stand out in bolder relief for having been perpetrated under a Government which is said emphatically to be founded on public virtue.

A Summary of the State of Cotton Husbandry immediately before, as contrasted with its progress immediately after, and ever since the invention of the Cotton-Gin, will follow this Memoir. It discloses a development of industrial resources for which we should search in vain for a parallel in the agricultural annals of any nation on the globe; and never did chick issue from the egg more obviously than this wonderful expansion of American industry from the effect of an invention in suitable reward for which, ELI WHITNEY, instead of a contemptible patent, should have received a million of dollars, along with the benedictions of his country. How different the treatment of COBDEN by the friends of free trade!—a donation already amounting to $750,000! When Whitney in-

vented the cotton-gin, in 1793, the whole cotton crop of the United States was 5,000,000 pounds, and the total exportation 487,600 pounds. In 1845, the U. S. cotton crop was 1,029,850,000 pounds; the exportation 862,580,000 pounds, the domestic consumption being 167,270,000 pounds. And this development, which began to show itself instantly, all must admit to be the fruit of that invention. Now by what rule shall we measure the value of such a benefaction to the country, and how should it be rewarded? Shall we take a lesson from the colonial policy of an old, ill governed monarchy? There the Royal Board for the encouragement of Agriculture on the Island of Cuba, have offered

"*One thousand dollars* to the person who, during the month of December, 1845, shall soonest prepare and put into the most perfect state of tillage, one cababelleria of land, with the improved American plow, worked by mules, and managed by whites.' *One thousand dollars* to the person who shall, on the first of December, 1846, show two 'cabellerias' of land well stocked with red clover of six months' growth. *Twenty thousand dollars*, in annual installments of $2,000, to the first person who, during the years 1845, '46, and '47, shall set up or establish a sugar estate or plantation, in which the cultivation of the cane shall be performed by thirty white families, consisting of a married couple each at least. *One thousand dollars* for the introduction of the bean used in the sugar estates of New-Orleans, as an article of food. *Four thousand dollars* to the person who shall show on the first of December, 1848, an artificial plantation of trees, of three years' growth. *Six thousand dollars* to the person who shall introduce from the East Indies 200 thriving and luxuriant stocks of sugar canes, &c. *Twelve thousand dollars*, in annual installments of $2,000, to the person or persons who shall set up, during the years 1845 and '46, a permanent establishment for the improvement of the breed of horses—four stallions, viz.: one of each of the following breeds, to be kept for public service, at prices to be fixed by the owner—one Andalusian, one Arab, one Norman, and one English—each to be of the genuine breed, of good form, size, &c. *Six thousand dollars*, in annual installments of $1,000, to the person who shall import direct from England one bull and six cows 'of the finest and most reputed breed of that country.' *Two thousand dollars* to the person who, on the first of December, 1846, shall show a herd of the 'largest sized swine,' introduced from the United States of America, or any other country. *One thousand hard dollars* to the person who shall, on the first of December, 1846, 'present or produce a breed of the largest domestic or barn-door fowls, (gallinas,) hatched or born on the Island, of a breed introduced from the United States of America, or any other country.'"

What, may it not be asked, has this enlightened Republic, and all the States and Societies in the Union done, in comparison with those munificent offers by this Royal Board "*for the encouragement of Agriculture*" in the Island of Cuba? Suppose the Government which every year derives so many millions of dollars on goods paid for with cotton, should have secured for the inventor of the gin even *one cent a bale*, to which none would have objected, the revenue to his family would now be $20,000 a year. Under the most absolute monarchies of Europe, men of genius who make discoveries in natural and practical philosophy, and by their genius confer great benefit on the industrial pursuits of the people have been enriched by Government patronage and raised to the highest political rank. Alas! for American character and the cause of American Agriculture, how different the treatment and the fate of the English barber's boy and the American farmer's son! The inventor of the spinning jenny, *Sir* RICHARD ARKWRIGHT, died with a fortune of $2,500,000! Is it, then, that our "government of the people" is to imitate them only or most nearly in their bestowment of education, and liberal pay, and high rank, and life commissions, and pensions, on that arm of power which despots maintain to stay the progress of free principles? Truly, the fate of Fitch, and of Rumsey, and of Clinton, and Whitney, and a host of inventors and men whose talents and virtues have improved and adorned the civil service and pursuits of our country, would seem but too justly to warrant the painful inquiry!

In the final illness and death of this great benefactor of Agriculture, he displayed the unshaken fortitude and strength of mind which seem never to have forsaken him. He has, we believe, left but one son who inherits his name and his virtues, but of his mechanical genius, of that, as of a genius for poetry, it may perhaps be said, *nascitur non fit.*

Through long and severe bodily affliction and partial repose, he reached the 12th of November, 1824, at which period we are told his sufferings became almost unintermitted until the 8th January, 1845, when he expired—retaining his consciousness to the last, closing his own eyes, and making an effort to close his mouth. It was his particular request that there should be no examination of the body to ascertain the nature of his disease, and he desired his funeral to be conducted with as little parade as possible.

A single inquiry for reflecting agriculturists, and those who nominally represent them: If any man should invent an engine of war, which in fields of battle should accomplish results as far beyond anything achieved by other nations and other times as Whitney's invention excelled all that had been done for a great field of national industry and wealth, what would be his reward? Does not the answer which every one must make to this inquiry, prove that there must be "something rotten in the state of Denmark"—something unsound in the public morals, which in all countries are greatly influenced by the spirit of the laws?

APPENDIX TO THE MEMOIR OF WHITNEY.

The Effect of his Cotton-Gin on the Cotton Husbandry of the United States.

In 1793, the year of the invention, the whole cotton crop of the United States was 5,000,000 lbs., and the total *exportation* 487,600 lbs. In 1793, when the cotton-gin was first extensively introduced into Georgia and South Carolina (then the principal region of that production), the whole crop increased to 8,000,000 lbs., and the exportation to 1,601,760 lbs. In 1800, when the machine had been thrown open to the people, without limitation, from regard to the legal rights of the patentee, the total production of cotton in the United States during the year amounted to 35,000,000 lbs., of which 17,789,803 lbs. were exported. In 1805, the whole production was 70,000,000 lbs., and the amount of *upland* cotton exported 29,602,428 lbs.—(value, $9,445,000.) In 1810, the crop was increased to 85,000,000 lbs., and the exportation of *upland* cotton to 84,657,384 lbs. In 1815, the whole of the United States crop was 100,000,000 lbs., and the exportation of *upland* cotton 74,548,796 lbs. In 1820, the whole United States crop was 160,000,000 lbs.; the exportation of *upland* 116,291,137 lbs., valued at $22,308,667. In 1825, crop 255,000,000 lbs., exportation of *upland* 166,784,629 lbs. In 1830, crop 350,000,000, exportation 290,311,937. In 1835, crop 475,000,000, exportation 379,000,000. In 1840, crop 880,000,000, exportation valued at $63,870,307. In 1845, the United States cotton crop was 1,029,850,000 lbs., and the exportation of cotton 862,580,000 lbs.; the domestic consumption being 167,270,000 lbs.

The recent annexation of the immense cot ton-lands of Texas, the abolition of the import duty on American cotton in Great Britain, and the vast and rapid increase of the manufacture of cotton fabrics in all parts of the United States, are evidences of the certainty of a farther increase in the production of cotton in this country. Enormous as has been the progress of this staple, from 1791 to 1845, it is destined to a yet greater extension in amount and value.

The exclusion of East India cotton from its previous monopoly of the markets of the civilized world, from the beginning of the present century, was mainly due to the introduction of the cotton-gin in the Southern States of the American Union, which substituted the rapid operations of machinery for the tedious and costly labor of human hands in the preparation of the crop for the use of the manufacturer. The recent attempts of the British Government and the East India Company to restore the successful production of cotton in Hindostan have consisted largely in the introduction of American improvements, especially of "THE AMERICAN COTTON-GIN," into those provinces which are adapted to the culture. The greater cheapness of labor, and even the superior quality of the product (in the province of Dharwar), were found to avail nothing, without the advantages of American machinery.

The pecuniary advantage of this invention to the United States is by no means fully presented by an exhibition of the value of the

exports of cotton (amounting to more than $1,400,000,000 in the last forty-three years), nor by the immense proportion of the means which it has furnished this country to meet the enormous debts continually incurred for imports from Britain and the European continent—COTTON having for many years constituted 1-2, 3-5, or 7-10 of the value of the exports of the Union. But it was the introduction of the cotton-gin which first gave a high value and permanent market to the public lands in the South-West. The rapid settlement and improvement of almost the entire States of Alabama, Mississippi, Louisiana, Florida, and Texas, is mainly due to the enlarged production of cotton consequent upon the invention of Whitney. The States of Georgia and Tennessee have also been largely benefited by the same means in the disposal of their domain, a vast portion of which must have remained unoccupied and valueless but for the immense increase of facilities for the preparation of cotton for the market. In the three States of Alabama, Mississippi and Louisiana, the sales of the public lands of the General Government amounted to 18,099,505 acres, during the eleven years ending on the 30th of June, 1844—yielding to the National Treasury more than $30,000,000. The sales of upland cotton lands by the United States land-offices have amounted to many tens of millions of acres; and none have been sold at a lower rate than $1 25 an acre—a large proportion at a higher rate.

It is to be remarked, finally, that the cotton-gins now in use throughout the whole South are truly the original invention of Whitney—that no improvement or successful variation of the essential parts has yet been effected. The actual characteristics of the machine (the cylinder and brush), the sole real instruments by which the seed is removed and the cotton cleaned, *remain*, in cotton-gins of even the most recent manufacture, *precisely as Whitney left them*. The *principle* has not been altered since the first cotton-gin was put in motion by the inventor, though great improvements have been made in the application and direction of the moving forces, in the employment of steam-power, in the running-gear, and other incidentals. Every one of the various cotton-gins in use, under the names of different makers, contains the essentials of Whitney's patent, without material change or addition. The brush and the cylinder remain, like Fulton's paddle-wheel, unchanged in form and necessity, however vast the improvements in the machinery that causes the motion.

A more imposing result of mechanical ingenuity directed to the benefit of a whole nation, and, through it, of mankind, has not been recorded in the history of the human mind. Certainly there is no patriotic American who will not rejoice to accord to this eminently useful, though basely wronged inventor, the judgment so well expressed by Mr. Lanman—that "Whitney earned the credit of giving a spring to the Agriculture of the South, which has been continued, unimpaired, to this day—a credit that will endure while the cotton-plant whitens the plantations of the South with its snowy harvests, or the machinery of the cotton-factory clatters upon the waterfall!"

BARLEY.

THE FOUR-ROWED AND TWO-ROWED VARIETIES.

WE do not know when we have read a letter with more pleasure than the one which follows this—not more, as the reader may suppose, on account of the information it imparts, than the free, enlightened spirit which dictated it. Surely, such acts of courtesy, and readiness to impart the knowledge of practical experience, ought not to be so uncommon as to call for remark, although always to be received with becoming thankfulness. *But is not the fact so?* Those who have enjoyed the opportunity to judge must have perceived how lamentably difficult it is to get *farmers* to write down what they know. Many of them would sooner sit down and be mesmerized for a tooth-pulling, than to take pen in hand. Not so, as all must have perceived, with men of other professions—"business men," as they are called. Is it that farmers' minds, like their hands, become stiff and rusty? If so, let them accustom themselves to *read*—ay, to read even THE FARMERS' LIBRARY, if they can get nothing better. That will keep their minds in exercise. And let them write notes on what they see, and require their sons,

when they come home at night from school, to read every night a few pages; and let them accustom themselves to putting on paper notes of what may occur, in the way of commentary on what they read.

See, in this letter about barley, how one of the most distinguished brewers, even of the celebrated "POUGHKEEPSIE ALE," has been looking thoroughly into his business, even through the breweries of London; and how he can, at once and off-hand, tell more about the different kinds of barley than one farmer out of ten thousand? May not the reflecting farmer, even in this, read a lesson of instruction? Is there anything in this letter on the varieties and properties of barley that any young, enlightened agriculturist should be ignorant of? Mr. Vassar was among the many who, at the Poughkeepsie Show, did, indeed, *throw his house open to the stranger within the gates. There* Committees were in attendance to hunt for and take charge of gentlemen coming from distant States to observe the products of the land, and in doing so could not be expected to shut their eyes to the *habits and ways of the people.* Every gentleman's house was the house of every gentleman.

The information here given was sought from Mr. Vassar with a view to append it, more particularly for the benefit of inquiring friends in Maryland, to the clear and satisfactory communication from Mr. Randall, which, we see, as we expected, has found its way into that safe, and sound, and well-wearing old repository of agricultural knowledge, the AMERICAN FARMER—into which, we doubt not, this will follow it, with or without these remarks.

POUGHKEEPSIE, N. Y., November 26, 1846.

Dear Sir: Your letter of the 19th ultimo came to hand in my absence, or it would have been replied to ere this. In answer to your questions, "Whether there is usually a difference in the price of four and two-rowed barley, and what that difference is, and on what founded? &c. &c." I reply, yes. The former is usually preferred by the trade on account of its superior malting properties, especially during the warm period of the malting season, requiring some three to five days less time to finish the process. It also yields more saccharine matter, pound for pound, compared with the two-rowed; the latter, possessing more gluten, germinates more slowly, and is therefore more difficult to convert into perfect malt.

The difference in price depends on their respective weights; the nearer the four approaches the weight of the two-rowed, the greater difference there is in price—and *vice versa.* When the former weighs 47 to 48 lbs. per bushel, and the latter 48 to 50 lbs., there are usually three to five cents in favor of the four-rowed, provided each grain is equally sound, &c.

It may be proper here to remark that the two-rowed barley in this State has greatly deteriorated within the last ten to fifteen years, chiefly through the negligence of the farmers in not selecting pure seed. The soil and climate, I am aware, have much to do in producing the necessary properties of good malting barley; but the inferiority of our two-rowed may be attributed chiefly to a mixture of several species of the same kind.

Large quantities of two-rowed were many years ago raised in the State of Rhode Island, and which was a heavy, coarse, dark and thick-skinned grain, very difficult to germinate. In the process of time it found its way into this State, and is traceable in all our two-rowed at the present day.

My father visited England in 1821, and brought over some twenty bushels of Norfolk barley (two-rowed). This was a short, plump kernel, thin skin, and very free to malt. In some sections of this State it is still discernible, but more or less mixed. The four-rowed is not so liable to deteriorate, as it matures or is ready to harvest several days earlier than the two-rowed. I believe there is no four-rowed raised in England; or, at least, none is used in brewing. The climate, being more cold and humid, is better adapted for the growth of the two-rowed; and we find in this country that this kind of barley does best on

high clay and gravelly soil, and a cool, moist season; while the four-rowed requires a warm, sandy loam, and is not so easily affected by drouth.

I was in England last year—visited most of the London breweries—saw their barleys and malts, and compared their samples with our own. Theirs was heavier and coarser grain, but an equal weight of ours would produce more saccharine matter than theirs.

The average price of barley at Albany this season may be stated at 55 cents for two-rowed, and 58 cents for four-rowed. The proportion cultivated is about 33 per cent. of the latter. The total quantity brought to tide-water this season (I think) is about 1,300,000 bushels. I am not sufficiently conversant in the management of stock to inform you of the relative advantages of each kind of grain, but barley (in its raw state) has not been considered by our farmers very profitable feed for stock. With regard to malting it for that object, I have no doubt of its advantages, and only wonder our farmers have never tried the experiment. Barley, by the process of malting, increases 2 to 3 per cent. in bulk, and loses about one-fifth in weight.

I should be pleased to do all in my power to aid the circulation of THE FARMERS' LIBRARY, and in the meanwhile, I subscribe myself,

Your obedient servant, WM. VASSAR.

Hon. JOHN S. SKINNER, New-York.

P. S.—The six-rowed barley is much of the same character as the four-rowed, but it has become proverbial to distinguish it by the name of the latter.

TRAP ROCK AS A MANURE.

EMPLOYMENT OF CHEMISTS.

OUGHT not every State, or Agricultural Society or Institute, possessing the means, to employ a competent chemist, whose duty it should be to analyze such soils and substances as might be sent from different parts of the State for the benefit of its Agriculture? Could any more useful office be well established? And would it not have been done long since if farmers were not the most neglected and the most self-neglecting class of beings that go to make up the great social compact. In the November number of the English Farmer's Magazine, we find the following, and deem it worthy of a place. We have heard of turkeys being fattened, not only on English walnuts, given to them whole, which we believe, but on "brickbats," which we do not believe. We were not before aware that land might be fattened, and its crops increased, by pulverized *trap rock*. But the march of inquiry is bringing many strange things to light—called strange, as the Indian calls the ship that heaves, and the lightning that flashes, and the thunder that rolls on the stage—strange, because he is not *behind the curtain!*

Here we may introduce the suggestion of a late writer, that the chemist would do well to test the efficacy of different manures on fictitious soils, the composition of which he knows exactly; and he might make fictitious soils of silica, alumina, lime, &c., alone, or in any combination. Thus he would fix his data, and form for himself, so to speak, a zero, or starting-point, by which all his subsequent experiments on natural soils might be regulated. He would thus be enabled to speak with positive confidence, says this writer, on matters that are now but probable, and would reduce to system and regularity the whole theory of manures.

P. S. We believe Mr. Bogardus of New-York has invented a mill that "makes nothing" of grinding up stones, "trap rock," for instance.

Query. What would the Legislature of Maryland say, should the farmers of the State, constituting so large a portion of their constituents, call upon them to establish an office of Agricultural Chemistry and Geology, to be always open for their use and benefit? Yet, how better for the public interests could a small amount of *their* money be better employed? We trust, at least, that they will have no scruple in instructing their Representatives and Senators in calling upon Congress for money to establish a Normal School for the instruction of teachers in the sciences akin to and promotive of Agriculture; and we call respectfully on the Agricultural Societies and Clubs to put a Memorial to that effect in circulation. Let these memorials go to an Agricultural Committee; and, at all events, let us hear whether there is such an interest to be recognized in the proceedings of the States. In New-Jersey and in Virginia, in leading papers of great and deserved influence, we have noticed that a sort of foreshadowing has been thrown out of the prominent measures that would occupy the attention of their Legislatures this winter, and we remark with shame, but not surprise, there is no more allusion to anything to be done for Agriculture, except as it is concerned in some schemes of internal improvement, than if there really was no such thing to be cared for.

Agriculturists! you have been so long ridden by other interests that is it not time to pluck up courage, so far, at least, as to propose with them the game of "ride and tie?"

TRAP ROCK AS MANURE.

Sir: In my former letter I stated that I had used a quantity of what I termed marl, but which term ought to be a trap rock, containing felspar and hornblende. The constituents of trap are silica in a soluble or disintegrated state, available to plants, alumina, potash, soda, lime, magnesia, oxide of iron, and oxide of manganese; and this rock contains, in addition to the constituents of trap, eleven per cent. of carbon.

Any person wishing to see its effects as a manure on vegetation, may, at Cwmguanum Clyro, Radmorshire, see three fields under wheat, that were dressed with it last year—two of them with a ton per acre, and about six tons of dung, and one with two tons, which was very low in condition, and no dung. The result is, that the three fields will average from 4½ to 5 qrs. of wheat per acre, which is an increase in favor of the manure of 1½ to 2 qrs. per acre, as they never exceeded three before. In 1844, I dressed an acre of the poorest part of a field with a ton of the trap for turnips, and the remainder of the field with 25 loads per acre of dung for potatoes. I sowed Swedes on the part which had the trap rock, and the flies took the most of them off, and I then harrowed in others which the flies also destroyed; there were some few of the first sowing that escaped both the fly and the harrow, which grew in that dry season to a large size. I sowed wheat after the potatoes at Michaelmas, and the turnips were gathered off in the spring and the ground sown with wheat. This year, without any other manure, I sowed the whole field with wheat in March, to see what proportion the one ton of trap would have to the twenty-five of dung, and the difference is in favor of the trap rock. In the second crop I have dressed three meadows with it, and the increase in crop is more than a third, as well as a better and more nutritious herbage.

Any person wishing for information respecting trap rock as a manure, if he will look at Professor Johnston's Elements of Agricultural Chemistry and Geology, will see it stated by him that it contains every nutriment vegetation requires. If it was pulverized to a fine powder, five cwt. per acre would be sufficient.

I wish to have it viewed by agriculturists, that they may see its effects on vegetation, corn, and grass, before I offer it for sale.

JOHN W. LLOYD.

Hay, July 20.

☞ THE MEMORIAL in behalf of the Plow, published in the last number of THE FARMERS' LIBRARY, is receiving warm support in Delaware. Surely there will be friends enough of the cause in all the States to force it on the attention of their Legislatures, and to extort from Committees some indication of what is to be expected for Agriculture while the public means are so lavishly bestowed on other concerns.

A BREAKFAST-TABLE CONVERSATION,

Between the Editor of The Farmers' Library, and a hard-working, practical Northern Farmer. About what? Read and you shall know.

THE fashion prevails lately in England, to a certain extent, to substitute public *breakfasts* for dinners at great meetings and fairs of Agricultural Associations.—These occasions give rise to public discussions, more or less extended; but, for our part, we have never been able to discover that much information could be imparted or acquired where people come together to see, rather than to talk or to listen—where, in fact, everything is calculated to divert and distract, rather than to compose the senses and instruct the mind. Hence we have often found that there was more information to be obtained in half an hour's horseback or fireside conversation, with such a man as friend JONES, of Delaware, or with Mr. CRAWFORD, superintendent of Dr. Stewart's Doden estate (a Napoleon in his way), or even with an experienced negro manager on a large plantation in the South, such as Col. Hampton's man LYMUS, than is to be gathered in the confused scene of an annual public fair or exhibition, by the conversations or discussions to which they give rise, such as they are. To see half that is to be seen, and to exchange salutations with the hundreds you meet, is as much or more than can be done with satisfaction. That, then, is a false view of the advantages of such annual fairs, which refers them to the benefits to be derived from oral interchange of knowledge.

In excursions about the country, and sojournings at watering places, last summer, for health and observation, pastimes among the most agreeable were found in occasional visits, unceremonious and without any formal introduction, but none the less respectful on our part, to *plain, practical farmers*, in the midst of their family circle, or their field labors, as it might happen—to such farmers as had won, throughout their bailiwicks at least, the humble but honest renown of being industrious, frugal, thriving managers of their own little estates; and who, by skill and diligence, had gotten to be what is expressively termed, "well to live in the world." And how much more to be coveted and enjoyed, the unpretending fame and livelihoods thus acquired, than the much bruited renown and overgrown fortune of the millionaire, gotten (as the professed gambler makes his by the turn of a card) by dashing, hit-or-miss speculations in trade—which may, perchance, elevate their projector to the giddy and dangerous hight of sudden affluence, or which may plunge himself and family into irretrievable bankruptcy, dragging down with him, as most frequently happens, his and their most reliable and confiding friends, into one abyss of common ruin.

How still more enviable is the humble estate and condition of such a farmer, than the ill-gotten wealth amassed by the surer and more cautious schemings of the wily shaver, who, gloating over the embarrassed fortunes of his neighbor and friend, generously grants him one pecuniary favor after another, at the rate of *cent. per cent.*, until, having griped his last dollar, he leaves him in helpless and hopeless despair, to fall into the gulf of ruin to which he had *kindly assisted to conduct him!*

In such "middling" farmers, so thrifty and so independent, no country in the world abounds as does New-England. The best systems, however, may be carried to extremes; and, truth to tell, there are defects in the domestic arrangements and economy of these farmers in the "Free States," which the cause of truth, and the duty of impartial inquirers after it, require to be noticed, and to which we now can only incidentally refer—intending, if not presently, on some future occasion, to speak of them more at length and more explicitly. Suffice it here to say that, in their eagerness to accumulate, and to make everything tell as much, or more, by saving than by making, labors too onerous, and cares too multiplied, *are thrown upon the good housewife;* while the children are stinted in their education from the time that the value of their labor in the field can be counted with precision.

Well are we aware how we expose ourselves to resentful animadversions for what is here hazarded, without meaning any particular application, much less to the case in hand. We know that such a charge should be followed at once by specification, and sustained by argument, lest a wound, that might now be assuaged, be left to fester in proud and jealous minds; but, leaving ourselves for the present in the hands of the skillful and accomplished Physician of the Hartford (Ct.) Infirmary or "Retreat" for the Insane, so renowned for its excellent management, we must proceed to our already long-neglected purpose of giving some account of a breakfast-table conversation, in September last, with Mr. B. A. HALL, whose farm and residence are in that beautiful valley which is overlooked from the southern piazza of the principal hotel at Lebanon Springs—as it is, indeed, from any one of the hundred eminences which there command a view of some thousand acres (including the Shaker village), all checkered with numerous well-cultivated little farms, and limited by a serrated line of well-defined mountain scenery—the whole scene reminding one of the famous "valley of Abyssinia."

Mr. Hall's farm consists of 200 acres of land—20 in wood, and 180 arable. Of these, about 50 are kept constantly under the plow—the residue being in grass. His staples are *butter* and *pork*. Of the former he sells about 4,000 pounds a year, and of the latter some 15,000 pounds.

Those of our patrons who take this journal for the sake of *reading* it, as we would fain persuade ourselves all of them do, may remember that, with the aid of a certain Mr. NEMO, an account has been given of a visit made by the Editor of The Farmers' Library, last summer, in company with Col. F. W. Pickens, of South Carolina, to Col. Chapman, the President of an Agricultural Society, near Saratoga Springs. By the aid of that same good and ever present friend Nemo, will we endeavor now to relate what was learned on this occasion of Mr. HALL, as to the management of his farm of 200 acres. The sketch must, however, be quite imperfect, and can only assume the ill-arranged form of the skeleton of notes and remembrances of an unstudied catechism on the one side, and off-hand responses on the other. But, even such as it is, it may prove to have some interest, especially for our friends in the South, who are wont to ask, "How *do* these northern people contrive to hire their force—to rear and educate their families, keep out of debt, and even lay up something out of their wee-wee farms at the end of the year?" Well, to proceed:

Having heard the common rumor of Mr. Hall's well-conducted dairy establishment and piggery, and that he was going ahead and *improving his land at the same time*, riding by one afternoon at twilight, we halted, "hitched" our horse

(a most miserable, flat-footed, down-headed beast), and going directly to the cow-pen, very near his house, met Mr. H. with his pail in hand, just about to join his men, and take his own station to pull away at the well-filled udder of a well-fed cow. Here, methinks, I can almost hear the southern reader, sitting probably at that very moment in his piazza, whiffing his fragrant Havana, while his careless colored women were half-milking some twenty cows a mile off, without supervision or responsibility—we almost fancy we can hear him exclaim, "*That's enough, sir*—you need not proceed. Where one reason is all-sufficient, the rest may be omitted. If *the man milks his own cows, I give it up!* for, with such a root, any tree must flourish!" But let us get along with our sketch.

Mr. Hall, laying aside his milk-pail, insisted that we should go into his house and take a seat, that being deemed a *sine qua non* toward getting acquainted, and discharging, on his own part, the duties of hospitality. In exterior his dwelling was as unpretending as dwelling could well be—like Col. C.'s, at Saratoga; but like his, too, inside all cleanliness and comfort. By the by, who can avoid—for the life of us we never could—on entering a dwelling, the true province and dominion of the good huswife, from slyly casting around to see how things look in *her department*—whether the windows are washed, paint scoured, hearth cleanly swept up, cupboard neatly arranged, mantle and chairs and chair-boards dusted, cobwebs not a speck to be seen—all, all "set in order," and neat and clean "as a bandbox"? But, gentle ladies, even all that, let us warn you, does not satisfy the judgment of men who, while they may closely scrutinize your housewifery, entertain, as we profess to do, the highest possible respect for the important, the noble station which Providence has assigned you in the eyes of all men of sense, and which honor and duty alike enjoin upon you to *fulfill*, with care and with pride, whatever, whether high or low, may be your rank or fortune; but, if possible, with more obligatory force and necessity in the country than elsewhere.

Too well are all men of observation aware that all is not gold that glitters—the fairest looking apple is sometimes rotten at the core. The hall, the parlor, the show-rooms, and all apartments in common view, may indicate *minute* attention and good taste on the part of the mistress, whose *eye* is best of all brushes; and yet, as it sometimes happens, the chambers of such a house may be the receptacles of filth—the cellars the convenient repository of every offal—the kitchen the scene of waste, and lounge of every idle loafer about the place—the dairy be poisoned with the bad odors of superfluous moisture and half-scoured utensils. We have seen such establishments with disgust; but much more doth it rejoice us to say that we *have* known and enjoyed establishments (when we had one to enjoy) where "the lady of the house," like the truly brave soldier who, when roused at midnight, springs at once to his arms, ready to do battle—so can such a woman, in proud defiance of the strictest scrutiny, take husband or stranger by the light of the lamp or the light of the sun, by day or by night, from the garret to the cellar—open every closet and every drawer—and demand, "Where do you find, in *my* department, a pin or a feather out of place, a mickle of waste, or a garment without a button?" But, to achieve all this, she should have all *needful* help. Such only is the woman who deserves the name of a good housewife; but he who possesses her possesses a treasure of inestimable value, and bad indeed must be his own management if, with her thrift and her example and encouragement, he fail to thrive. "*She looketh well to the ways of her household*, and eateth not the bread of idleness."

But to return once more to Mr. Hall and his management. Being at the time of this first call "belated," and yet wishing not to indulge an idle and impertinent curiosity, but catering with honest intent for that which is our chief care—information or amusement for our readers—we excused ourselves from staying for supper, saying to the good lady of the house that, if she could promise a glass of fresh buttermilk, we would ask the favor to have a seat at her breakfast-table the next morning. The promise was graciously made, the hour announced, and so we departed.

True to our engagement (and not forgetful of the buttermilk), the next morning found us seated at the table—and with whom, does the reader suppose?—Mr. HALL and his wife and children, with servants in attendance to fetch and carry, and laborers eating or waiting in an out-house? Not at all. There were the husband, the wife, and several laboring young men, who had milked the cows, and were busy with other work until after breakfast, when they should all, with the boss in the lead, repair to the fields for the regular labors of the day. A most substantial breakfast, too good for tyrant kings and no less tyrannical demagogues, had been all at once placed before us, to be partaken of at once and equally by every one whose labor contributed to the products of the farm. The "help" in attendance consisted of one young woman, who had assisted to cook what she served up. The laboring young men were in their working-clothes, and their deportment marked by that discretion and good temper, and their appearance indicating a degree of physical energy, which were all calculated to insure harmony in the social circle, and success to the labors of the farm. Of what that labor produces, and the system on which it is conducted, we have now to speak—not, as before stated, systematically, but as the facts came to light in the course of unstudied inquiry and impromptu answers.

About one-half of the 50 acres kept under the plow is in "hoed crops," chiefly corn, pumpkins and potatoes. For these his practice is to plow his land in autumn and spring, according as he can get time; but, to an inquiry on that point, he answered that he was of opinion that the nearer the plowing should be to the planting time, the better. The relative advantage of fall and spring plowing presents to the inquiring agriculturist, it may here be remarked, an interesting question. Much in this case depends, no doubt, on the previous crop and condition of the land, and on the *climate*. But we must avoid farther episodes.—Mr. H. plants his corn only three feet each way, and six or seven grains in a hill, counting on five or six to "stand," and, if the land is rich, to average an ear for each stalk. In this may be found one of the mysteries how it is that such heavy crops of Indian corn, from 80 to 100 bushels—premium crops—are gathered from land in this northern climate, considered to be comparatively uncongenial to the constitution of that noble plant. Hills at 3 feet apart give 4,840 to the acre, and 5 ears to the hill give 24,200 ears. The reason that it bears to be thus thickly planted is, that it does not grow to more than half the hight of southern corn. Nature seems to have provided for the drier climate of the South a plant with more leaf to imbibe the dew and rain, and, if planted as thick as at the North, it would not produce half a crop. The pollen could not fall upon the silk to impregnate the ear. The much vaunted "*Dutton corn*" proved a failure in the South. Behold *another digression!*

If it be sward land, designed for corn, Mr. H. *plows* it but once. The sward is inverted, and the top of it so inverted left undisturbed through the season; while the soil which, by inversion, is brought to the top, is afterward worked

exclusively with harrow and cultivator. These implements, by the by, have become so common that, like old, familiar friends, we rarely reflect on their labor-saving and excellent qualities. Let those who would calculate them turn to the table in the MONTHLY JOURNAL OF AGRICULTURE, page 177 of the current volume. His manure is all composted, and carried into the fields, but not spread or used before the land is turned up with the plow. It is there put in heaps, where it is turned two or three times, and soon ferments and becomes mellow. His compost is made in the barn-yard only when intended for use near at hand. After the land is plowed for its crops, the manure is spread broadcast, 20 to 25 loads of half-cord—that is, 4 feet long, 4 feet deep, and 4 feet wide, to the load—equal in fertilizing power, probably, to 100 loads of ordinary coarse manure, from barn-yards where cattle are fed entirely on *straw and "shucks,"* and the manure exposed to all weathers. *Stick a pin there, good reader!*

☞ *Again:* He then "cultivates" or harrows the land two or three times, before planting, until the land is in fine tilth and the manure thoroughly intermixed! Then he "lays it off" with a *labor-saving* marker, that will mark three rows at a time. This marker "any smart man will make in two hours with cultivator teeth." He wishes never to disturb the underlying sod, which is going on rotting, and as it rots affording nourishment to the crops above it. Twice going over with the cultivator each way, making four times, he finds sufficient for corn. But the reader will do well to bear in mind the ends in view, the staples—as he goes along, to wit: *Hogs and Cows* to be fed through the summer—the former being always "kept up," except when sometimes turned into the pea-field. Oats and barley are sown sometimes separately, but frequently as a mixed crop. Sometimes peas—a "June pea" resembling, but smaller than the Marrowfat. Sometimes the hogs are turned into the pea-field.

Instead of peas in Kentucky they sow fields of rye for hogs, which are turned in when, perhaps, not dead-ripe; and the grain which finds its way and is left in the ground, makes fine fall pasture for mules and cattle. This we have supposed might be done with profit on the southern Atlantic board. But the peas are most usually cut and fed to the hogs in the pen. When barley and oats are sowed together, which are found to do well, or either separately, the measure is three bushels of seed to the acre, and with them, or rather on them, clover and timothy. Of these grains (barley and oats), mixed or alone, his usual crop is 40 bushels to the acre, which he considers a good fair crop, though he frequently gets 50 and 60—sometimes 50 of barley, but esteems 30 to 35 to be a fair yield. These grains are ground together, and mixed with vegetables: so are all sorts of grain—corn, rye, buckwheat; and all are the better for being cooked, especially when used with vegetables, which generally consist of pumpkins and potatoes—usually the latter, though these have been difficult to raise the last four or five years.

He sometimes feeds his hogs on apples, but does not value them highly. He depends much on cutting clover for his hogs; yet you shall hear many who have abundance of clover wonder what men can do for want of food, other than grain, for hogs that are kept up in summer time.

Mr. Hall killed last year 75 hogs, that weighed 15,000 pounds, and got for them 5¼ cents per pound. He keeps an average number of about 22 cows through the year, and sells about two tons of butter, 2,000 pounds to the ton, at an average of 20 cents a pound. He has this year sent about 1,000 pigs to the

Boston market, by railroad, from a depot of which, at Canaan Center, he lives some 7 or 8 miles. *These* pigs averaged about 45 pounds at two months old, and brought 9 cents a pound. They are fed "on the sow" and on sour milk and meal. They begin to eat at four weeks old, when he gives them "something they like." Without entering upon philosophical disquisitions about the matter, Mr. Hall sententiously remarked that the proper business of a hog's life was "*to do nothing but to eat and sleep.*"

His hogs not unfrequently reach 600 weight at 18 months old. He showed eight pigs of one litter that, when killed, at about 14 months, will, he judges—we think within the mark—average 300 each. He makes it a point in cold weather to keep his hogs *clean and dry*—a *dry bed* and *clean straw* are the *sine qua non* with him. How unlike two hogs we saw, late in November, not many miles from Washington, in a small pen, from which there was no escape for the very liquid mud and water, several inches deep, in which they were standing all day, and lying down only when they could stand no longer, without a particle of litter of any kind, or any precaution to save a particle of their manure; and this in full view every day. Though one swallow may not prove the access of summer weather, yet one sight like that would convince the most partial judge that the farmer who could sleep in his bed, with hogs left to sleep in such a bed as that, had altogether mistaken his calling. It would be as impossible to make a thriving farmer out of such an one, as to make great and wise rulers out of demagogues.

Mr. HALL looks to pumpkins as quite an important item in his resources for both cows and hogs. His pumpkins are planted among corn, thick as that is planted, and he gets from an acre about 20 loads of the common field pumpkin. These he finds quite susceptible of frost, and are best kept in a shed covered with straw, and not in cellars. It is important to keep them dry. As they are liable to be destroyed by frost, good economy dictates that they be fed early in the season, both raw and cooked; when raw, they are cut in half for the cows, and "they will manage them." His cardinal rule is to sell neither grain or straw off his place, but, turning all into manure, he keeps his farm, as every man does *whose foundation is not giving way, always in a state of progressive improvement*, be that never so little. Another great reliance with him for manure is on *muck*, of which there is a constant supply within a few feet of the back of his piggery. That is kept well supplied with muck generally, but most especially when his hogs are fed with vegetables, and when, therefore, their voidings turn the muck to most account.

We were not a little surprised to learn how long their meadows, even some on hill-sides, as at Col. Chapman's, near Saratoga, are kept unbroken, yielding good crops of grass. Mr. Hall showed a lot which had been under the scythe for more than fifty years.

This whole region enjoys the reputation of being very healthy. The water is good, the temperature delightful, the topography of the country such as to secure it against stagnation and malaria, and, above all, the people industrious and sober. Mr. Hall's father had moved here from Connecticut 65 years ago, and died last spring, at the age of 85. He showed a field of corn, which he seemed not to consider extraordinary, and from which he counted on 60 bushels of corn to the acre. With such management, and such appliances of manure—such fine tilth in the way of preparation, and such frequent and nice cultivation—what crops might not be grown on the river and creek bottoms of

Maryland, Virginia and North Carolina? Take, for proof, the following extract:

"WASHINGTON, D. C.

"I have lately returned from my plantation in Charles County, Md. I have made somewhere about 2,000 barrels of corn, nearly half 'housed,' of the best sound quality; and some of the land has been so much more productive than Maryland corn-lands have credit for, that I must make a statement, on the credit of my overseer, upon which I rely, that seems to me worthy of publication—as follows:

"Upon scant two acres of my land, by measurement, situated immediately adjacent to Nanjamoy Creek, under the management of JAMES K. NASH, the overseer, twenty-five barrels, or one hundred and twenty-five bushels, of good merchantable corn, by actual measurement, were raised the past season, and five bushels more of 'nubbins,' or short corn—thus making upward of sixty bushels to the acre. The corn had been planted 3½ feet apart, 2 feet between the hills, and two stalks in a hill.

"The overseer (superadded to the favorable season for those who had planted early) ascribes his success to *deep plowing*. There had been no unusual application of manure.—The preceding year the same land had produced a fair quantity of tobacco, of good quality.

"Truly yours, B. O. T."

It will be seen that, according to the above arrangement, there stood on the acre 12,444 stalks, while on Mr. Hall's there were 24,200. We think it probable, however, that on Mr. Tayloe's land each hill of two stalks yielded an average of 3 or 4 good ears. But the probability is that his was of the yellow or white gourd seed species, which would considerably overshell, ear for ear, the bright, hard, yellow flint corn, planted in the Northern States. So much for the overlooked, neglected, and much berated and belied lands of Maryland and Virginia, possessing advantages of cheap transportation, vicinity to market, and easiness to be worked, unequaled, when combined, to any in this Union. But some other occasion must be taken to amplify and verify this incidental point. For that purpose and to execute it more thoroughly, we propose, when we can get time, a personal survey. Let us proceed with our breakfast, and familiar categorical conversation over our pitcher of buttermilk.

Mr. Hall and his neighbors are getting, we were glad to learn, all alive to the vast importance of *under-draining* their lowlands. He cuts his drains about 2½ feet deep, and fills in with about 1½ feet of stone; then inverts the sward on the stone, and fills up with the dirt thrown from the drain. He doubts not that the lands in the valley generally will double their present crops when well under-drained, but we apprehend much will be imperfectly done in the beginning. Our memorandum is that he could get under-draining done, where the stone is at hand, for 50 cents a rod of 16½ feet; but that seems almost too cheap to be correct—that is, if the drainer completes the work from beginning to end; though we feel confident that was the statement; and, upon reflection, a stout man—especially an Irish ditcher, with his amphibious, muskrat habits—might do good work at that, especially if found by his employer. We think it probable that 3½ instead of 2½ feet deep would be better, and even cheaper in the long run.

After laying down his fields to grass, succeeding his root crops, the heaviest crop is taken off the second year, but he counts on about 2½ tons for the first three years. Hay being worth there about $7 at the mow, this would give $17 50 an acre, with none but the cost of cutting and curing. And, after all, the great difference between the North and South is, that in the North their crops are but a short time on hand—that is, their hoe crops, and their staples, hay, stock, butter and cheese, hops, wool, apples, and fruit and poultry, require comparatively little labor and short time to realize their value; whereas, in the South, the crops—rice, cotton, sugar and tobacco—are on hand from year's end to year's end. The harvest-home trenches on the seed-time; it 's toil, toil, toil—trouble, trouble, trouble—all the year round. Instead of the northern farm

requiring superior skill and diligence, as many suppose, the reverse is the fact. The owner, who should always be the *head* manager of the southern plantation, should be able not only to teach the soldier how to go through the manual exercise, but he must have the skill and the firmness, the science and the tact, of the general, to combine and command. He has need to be a practical chemist and a manufacturer, as well as a practical planter. The public mind is in a fog on this subject. The management of a northern farm lies in a nutshell—a cow-bell may be heard from one side of it to the other. A southern cotton or rice or sugar plantation is a wide domain, and he who makes the most of it must know something of hydraulics, of civil engineering, of complicated machinery, of vegetable chemistry, and of physic and metaphysics in the bargain! But enough of this, too, for the present—let us back to our theme, or we shall never be done with this buttermilk breakfast.

We profess to hold in great contempt all mere statements of facts and results, without affording the means of applying them or of drawing some useful and practical conclusions—as premiums are given by Societies for big crops and fat hogs, without examination or means furnished for exactly understanding the *means to the end.* Of what avail to say, for example, that Mr. Hall makes a certain quantity of hay or corn on the acre, or a certain quantity of butter, or that he kills a certain amount of pork, without affording the means to *judge of the profits*, by showing the value of his investment in land, and of the food employed, and the marketable price of the commodities produced and for sale, &c.? So we proceed to state that, at the time referred to, hay was worth $7 at his barn-door, corn about 50 cents, oats 33, barley 52—the last generally about 50, and Mr. H. thought it worth that for food for hogs. He thinks the relative value of corn, barley, and oats, as *food*, bears about the same proportion they do to each other in *weight;* the weight of corn being 56 to 60—which we suppose to be somewhat heavier than southern corn—barley 48, and oats 32. These are the standard weights. The real weight of oats is usually here from 30 to 32. Our impression is that mountain oats—Alleghany oats, for example—go up usually to 40 pounds to the bushel; "Eastern Shore" oats, 28. For various grains, in many States, there is no standard weight. Better would it be to sell everything, where it is possible, by *weight* than by *measure;* and better for the farmer, and the character of any market, that the standard of quality (flour, for instance) should always be kept *high*, and honestly preserved.

At Quebec, meats are nearly all sold by women, sitting in carts, in a square outside the market, and the purchaser pays, with confidence, according to *small gashes* cut in the grain of the meat—as thus, IX. for nine pounds. You turn over the pieces, into which the meat is all ready cut up, until you find one bearing as near as may be the mark of the weight you want; and, when you find these little gashes, you pay the old woman accordingly; and we were told that such a thing as cheatery or deception was almost unheard of. Well, says the reader, this was a most unconscionable breakfast, to last so long.

Inasmuch, then, as we have yet to speak more particularly of his butter—its manufacture, sending to market, and sale; also, the facilities the railroad affords to agriculturists, so much beyond what is enjoyed in the South; also, of the formalities of sending to market and getting account sales, together with the price of lands in the neighborhood—we must here break off, and finish with some remarks on these topics in our next number, if not "crowded out."

SHEEP HUSBANDRY IN THE SOUTH.

[The series of letters of which the following are the beginning, from Henry S. Randall, Esq., of Cortland Village, N. Y., to R. F. W. Allston, Esq., of Waccamaw Beach, (near Georgetown, South Carolina,) will be continued; and will be found, when completed, to embrace a full Manual of Sheep Husbandry and Wool Growing for the Southern States, with a very fair and thorough investigation of all the facts which go to throw light on the feasibility and profitableness of those branches of industry in the region alluded to.

It was certainly not from any want of sheep books, nor of essays on Sheep Husbandry, within our reach, founded either on general inquiries into the subject, or on local and partial experience, that we urged on the writer the preparation of these letters. The good will of authors and publishers, and the liberality of the Publishers of The Farmers' Library keep us supplied with all works of any authority on this and other branches of agricultural industry. But in the midst of these abundant materials for general information, we have long desired to present something which, without interference with the rights and labors of others, might be confidently exhibited as the special fruit of careful investigation and actual experience on the part of some enlightened and practical sheep farmer. Here, accordingly, we offer the views of one, acquired under circumstances and with a power of discrimination that enable him to adapt his observations to the climate, wants and means of that very large portion of our country in which this important resource appears to have been too long overlooked and neglected.

It would be altogether superfluous to enlarge on the importance of adding to the staple products of any region one so considerable as is *Wool*, where Nature has provided the means of producing it.]

LETTER I.

EFFECT OF CLIMATE ON THE HEALTH AND WOOL-PRODUCING QUALITIES OF SHEEP.

Introductory Remarks...Wool-Growing and Manufacturing Statistics of the Southern States compared with those of New-York...Effect of Warm Climates on the Health of Sheep...Sheep in the Southern States below latitude 32°...Effect of Climate on Wool-Producing Qualities of Sheep—on the Quantity of the Wool...Weight of Fleeces in the Southern States indicated by U. S. Census of 1840—Important Omissions in that Census—Other important Errors in it...Table of Weights of Fleeces in Four Counties where they average highest in each of the Southern States and in New-York—Latitude, Topography and Climate of those Counties...Warmth of Climate conducive to the Production of Wool—Reasons.

R. F. W. Allston, Esq—

Dear Sir: That spirit which prompts communities and States to attempt to render themselves independent, so far as the supply of physical wants is concerned, of other communities and States, is an eminently proper one, up to certain limits. Beyond these, it degenerates into mere sectional selfishness, as deserving of reprobation in the community as in the individual—nay, more so, for it militates more widely against the interests and happiness of mankind. Agriculture supplies the most of our physical wants which are not administered to spontaneously by Nature. In this great department of human labor, it is not difficult to decide how far the inhabitants of each particular region are called upon to rear from the earth what their wants require. Nature herself has, in the distribution of soils and climates, both indicated and limited the production of many of the agricultural staples, by geographical boundaries, sometimes topically

and sometimes by whole regions. This compels those practicing Agriculture, both as individuals and masses, to make that "division of labor" which, as in the mechanic arts, gives a better knowledge of its principles and a greater expertness in its practical manipulations. It also creates the necessity of exchange. Exchange is commerce, and commerce begets and diffuses civilization.

Agricultural production, then, should be controlled by the demand or want, and by the adaptation of the country to such production. It would be absurd, for example, for New-York to attempt to raise its own rice and cotton, instead of exchanging the surplus of what it can most readily produce for that rice and cotton, or selling its surplus where it is wanted, and buying the rice and cotton with the proceeds. But, on the other hand, it would be equally absurd for New-York to be dependent on South America or Australia for her wools, when she can raise that staple just as well as those countries, and thus save paying for transportation and the hire or commission of the agents of exchange.

Though Nature both indicates and limits the production of staples by soils and climates, she too rigidly enforces the primal curse, or perhaps we should say blessing, of labor, to bring forth each, indigenously, in the regions adapted to it, or ever to place them there, unless transported by the enterprise and industry of man. The potato and maize were a recent gift from this continent to the eastern. The debt has been repaid by rice, the sugar cane, the horse, the cow, the sheep, and a multitude of other plants and animals. How singular is the history of some of their deportations! The sugar cane, now furnishing an important staple in some of our own Southern States, originated in the eastern confines of Asia; was not vouchsafed to the Greek and Roman; traveled into Arabia about the last of the thirteenth century; passed thence into Africa; was carried by the Moors into Spain; by the Spaniards and Portuguese into the West India Islands; and thence we received it. Rice, the great staple of your own State, sir, a plant of which it has been said that it "has altered the face of the globe and the destiny of nations," originated also in Asia, and has traveled by the same slow stages, until it has reached that low zone which skirts our south-eastern shores, to render its vast marshes, otherwise useless, as profitably productive as the best grain or cotton lands of the Southern States.

Here, sir, we find an instructive lesson. Other regions there are in our Southern States, now, nearly as useless as would be her "hammocks" without rice, inviting the introduction of some other great staple to supply, if feasible, a home demand, and a surplus for profitable exportation. If this great object can be achieved, and by the same means, the husbandry of the regions now under cultivation be made to assume that mixed and convertible character which will both add to their present proceeds, and better sustain their fertility, for future demands on them, a benefit will be conferred on the South the present and final results of which it would be difficult to overestimate. Repudiating theoretic speculation and vague conjecture—advancing just so far and no farther than we find our way illumined by the broad and certain light of facts, let us inquire what important staple there is, not now extensively produced at the South, which would come within and at the same time fill the requirements I have mentioned.

Woolen fabrics constitute an important item in the imports of the Southern States, and for these they exchange the proceeds of no inconsiderable proportion of their industry with the Northern States and with Europe.

The following table will exhibit the population, and the amount of home

production in these staples, according to the U. S. census of 1840, in the States south of the Ohio and Potomac, and west of the Mississippi, (including Louisiana,) in 1839. To these are added, by way of comparison, the statistics of the State of New-York, under the same heads, for the same year:

TABLE No. 1.

States.	*Population.*	*No. of Sheep.*	*Lbs. of Wool.*	*No. of Woolen Factories.*	*Value of Woolen Manufactured Goods.*
Virginia.....	1,239,797	1,293,772	2,538,374	41	147,792
North Carolina...	753,419	538,279	625,044	3	3,900
South Carolina...	594,398	232,981	299,170	3	1,000
Georgia	691,392	267,107	371,303	1	3,000
Florida.....	54,477	7,198	7,285		
Alabama	590,756	163,243	220,353		
Mississippi.....	375,651	128,367	175,196		
Louisiana.....	352,411	98,072	49,283		
Tennessee	829,210	741,593	1,060,332	26	14,000
Kentucky	779,825	1,008,240	1,786,847	40	151,246
Total.....	6,261,336	4,478,852	7,133,187	114	320,938
New-York.....	2,428,921	5,118,777	9,845,295	323	3,537,337

The above is only given to indicate approximate general results; for, as I shall subsequently show, the returns of the product of wool are inaccurate to the last degree.

The question now arises, whence the immense disparity in the growth and manufacturing of wool in the State of New-York, comprising 46,000 square miles of territory, and less than two and a half millions of population, and the ten States above enumerated, covering an area of 495,000 square miles, and exceeding six millions of population? Is the growing of wool, (for we will first consider this, as the main question, leaving the subject of manufacturing for subsequent examination,) to its present extent, profitable or unprofitable in the State of New-York? I contend, and shall attempt to prove, that taking a term of say ten or fifteen years, it has been the most profitable branch of industry carried on in the State. If this is true, why is it not equally profitable in the Southern States?* Is there anything in their climate which renders them less favorable to the health or wool-producing qualities of the sheep—or is there anything in their topographical features, soils, herbage, or other circumstances, which unfits them for a natural and easy adaptation to sheep husbandry? Or have they other staples so much more profitable that it is not an object to grow wool?

Having bestowed some attention on these points, and having been practically familiar with the most minute details of sheep husbandry from my childhood, I have thought that the conclusions I have arrived at, and the facts on which I have based them, might not be uninteresting to you. To bring these facts connectedly before you, I shall necessarily be driven to repeat some matter from my own and the writings of others, which you have doubtless before seen in the publications of the day.

Let us now take up the first of the two preceding questions; and first I will call your attention to the effect of Climate.

Sheep have been bred, time out of mind, on the Eastern Continent, from the Equator to the 65th degree of north latitude, from the burning plains of Africa and Asia, to the almost perpetual frosts of Iceland. The Merino, (the different families of which, as will be shown, constitute the only varieties suitable for wool growing on a scale of any considerable extent,) has been bred in Europe, for ages, as far south as between the

* When I use the words "Southern States," without farther specification, you will understand me to mean the ten enumerated in Table 1st.

36th and 37th parallels of latitude, and has, within the last few years, been acclimated with perfect success as far north as various points in Sweden.

If any difficulty exists in the climate of the United States, rendering it unsuitable for the rearing of sheep and wool, it must be its heat; and this must affect the wool-producing qualities of the animal alone, and not its health, as the following facts will show. There were upward of 660,000 sheep in the five most southern States, in 1839. In Florida, they have been acclimated as far south as the 29th degree. In Louisiana, Mississippi, Alabama, and Georgia, they not only flourish in the northern and more elevated sections, but on the low, fenny, tide-water region which skirts the Gulf of Mexico. In the above five States there were, in 1839, upward of 190,000 sheep below the 32d degree of latitude, viz.: in Georgia 32,986, Florida 7,198, Alabama 22,053, Mississippi 56,780, Louisiana 81,627.* They graze with equal impunity the vegetation on the margin of the Great Okefinokee Swamp (in Georgia and Florida) and on that which rankly flourishes among the ooze at the mouths of the Mississippi. It may interest some less acquainted than you are, sir, with this subject, to know that in 1839 the county in which New-Orleans stands (Orleans) contained 1,807 sheep; Jefferson, on the opposite side of the river, 6,871; St. Bernard, extending from Orleans to the Gulf, 1,154; Plaquemine, almost surrounded by the waters of the Gulf, and comprising the delta of the Mississippi, 1,832; Lafourche Interior, on the Gulf, 1,253; Terrebonne, another Gulf county, 1,013; St. Mary's, another, 8,211; and La Fayette, another, 2,622.†

No portion of the United States is lower, hotter, or more unhealthy, than much of the preceding, and none, according to commonly received notions, would be more unsuited to the healthy production of sheep. Yet, that they are healthy in these situations is a matter of perfect notoriety to all conversant with the facts. So far as health is concerned, then, we are assuredly authorized to assume the position that no portion of the United States is too warm for sheep.

We come now to the effect of climate on the wool-producing qualities of the animal. Assuming the census returns of the United States in 1840 as reliable data, they would furnish strong proof that the warmth of the climate has a marked effect in diminishing the weight of wool per sheep; and they have been adduced as furnishing conclusive evidence to that effect, by persons more accustomed to broad assertion than patient investigation.

The following will give the weight of wool per head in the States enumerated in Table No. 1, estimated from the census returns of 1840:

TABLE No. 2.

	Lbs.	Oz.		Lbs.	Oz.
Virginia	1	7 845	Alabama	1	4 146
North Carolina	1	2 221	Mississippi	1	4 227
South Carolina	1	3 539	Louisiana	0	8 040
Georgia	1	4 487	Tennessee	1	4 809
Florida	1	0 410	Kentucky	1	6 971
New-York	1 lb.	7 680	oz.		

But an examination of the census will show that so far as several of these States are concerned, it is entitled to very little credit, in this particular, and that it is correct in relation to none of them.

In Louisiana, in fourteen counties from which 30,261 sheep, or nearly one-third in the whole State, are returned, not a pound of wool is returned.

In Florida, four counties, returning 228 sheep, return no wool. Let us

* U. S. Census, 1840. † Ib.

examine the comparative products, per head, as set forth in some of the counties from which returns of sheep and wool are both made, with a view of testing their accuracy. Escambia returns 485 sheep, and 837 lbs. of wool; Walton 386 sheep, and 575 lbs. of wool; Leon 1,798 sheep, and 3,360 lbs. of wool—or an approximation to 2 lbs. of wool per head. Nassau returns 436 sheep, and 1,200 lbs. of wool, or about 3 lbs. per head. On the other hand, Gadsden returns 1,875 sheep, and 512 lbs. of wool; Jefferson 752 sheep, and 300 lbs. of wool; Madison 223 sheep, and 50 lbs. of wool; Jackson 960 sheep, and 376 lbs. of wool, or not quite a third of a pound per fleece! Now Leon is bounded on the west by Gadsden, and on the east by Jefferson, and all lie in the same latitude, and do not differ essentially in their soil, herbage, or temperature! Madison lies immediately east of Jefferson, (though its southern angle extends somewhat farther south,) and Jackson joins Walton. Nassau is in the same latitude. Hamilton, returning no sheep, returns the product as 20 lbs. of wool!

In Mississippi, eight counties returning 15,227 sheep, return no wool; and there are repeated instances of the same glaringly obvious errors that have been exhibited in the statistics of Florida. For example, Smith county returns 741 sheep, and 1,067 lbs. of wool; Wayne 921 sheep, and 1,466 lbs. of wool. Jasper, bounding Smith on the east, returns 1,848 sheep, and 418 lbs. of Wool; and Clarke, bounding Wayne on the north, 1,199 sheep, and 188 lbs. of wool! By this, the sheep of Clarke shear less than 3 oz. per head, while those of the next county shear over a pound and a half per head. There are various other instances of under returns in the State.

In Alabama, two counties returning 2,138 sheep, return no wool; and in eight counties there are the same glaring instances of under returns with those given above.

In Georgia there is but one omission to return the wool, where the sheep are returned. In that county there were 3,360 sheep. There are eight or nine instances of obvious under returns, but these in the aggregate of the State are partly balanced by two gross cases of over returns. Cobb county returns 3,524 sheep, and 36,057 lbs. of wool; and Richmond 758 sheep, and 3,032 lbs. of wool!

In South Carolina there are at least six instances of under returns.

In North Carolina there are no returns of wool in one county, containing 2,163 sheep, and in another 7,260 lbs. of wool are returned, and no sheep. There are ten cases of obvious under returns. In one of them 46,340 sheep are made to yield but 12,686 lbs. of wool.

In Virginia there are no omissions, and no obvious under returns. There are several over returns.

In Tennessee there are no omissions, but there are seven obvious under returns and two or three over returns.

In Kentucky and New-York there are not sufficient erroneous returns to materially vary the aggregate.

The foregoing facts show that the Marshals in many counties in the most southern States entirely neglected their duty in returning the product of wool; and where over or under returns have been made, it is probable that, by a misapprehension of duty, the amount of wool *on hand* was ascertained and noted down, instead of the annual clip.

And there is another and general error in these statistics, throughout all the States, by the census including in the number of sheep the lambs of the current season, which had not, of course, been sheared at the time of taking the census. A, at the time of taking the census, owned a flock of 200 sheep over one year old, and 100 lambs. He would give in his flock

to the Marshal as 300, of course, for the census makes no distinction between lambs and grown sheep. He gave in 600 lbs. of wool, which would be 3 lbs. per head for those which had been sheared. But by the lambs being included in the census returns, it is made to appear that his sheep sheared but 2 lbs. of wool per head. In the next census the lambs and sheep should be separately returned, not only to obtain accuracy, (without which such statistics are valueless,) but the annual increase thus indicated would be, of itself, an interesting and valuable statistic.

In the preceding enumeration of erroneous returns, I have set down none as under returns where the product of wool has not been given as less than a pound per head; and where it has fallen under that amount, the returns from contiguous counties, possessing the same natural features, exhibiting a far superior product, as well as the general complexion of the returns throughout the State, have authorized me beyond a reasonable doubt so to consider it. I may add, that it is a fact of universal notoriety that there is no variety of sheep in any section of the United States, which shears but a pound of wool per head.* A careful inspection of the census, moreover, will not fail to satisfy any one that there are a multitude of under returns, (not specified by me, as the product is given over 1 lb. of wool per head,) in most of the States. This is shown by the same kind of comparisons which have already been alluded to. These are far more common in the extreme Southern States, where wool growing had not yet (in 1839) been reduced to any system, and where sheep had been little looked after or regarded. These errors grow less, as we approach the wool-growing regions of the north and north-west.

Taking those returns which we are authorized to consider correct,† it will appear that there is no great difference in the average product of wool, per head, in States separated by from ten to fifteen degrees of latitude, and no more than is clearly referable to incidental or extraneous causes, unless we come to the conclusion that the difference is in favor of the Southern States. In proof of this, the following table is offered, giving the products of some of those counties in each of the States enumerated in Tables No. 1 and No. 2, which exhibit the highest averages per head, (excluding those obviously over returned.)‡

TABLE No. 3.

State.	County.	Average Weight of Wool per Sheep. Lbs.	Oz.	Total average of the Counties given‖ Lbs.	Oz.
Virginia	Fauquier	2	$2\frac{2250}{7011}$		
	Harrison	2	$0\frac{9056}{35119}$		
	Ohio	2	$2\frac{1050}{26689}$		
	Rockingham	2	$1\frac{4649}{4791}$	2	$1\frac{1}{4}$
North Carolina	Currituck	2	$7\frac{443}{459}$		
	Person	2	$5\frac{913}{3027}$		
	Perquimans	1	$12\frac{2202}{2383}$		
	Tyrrel	1	$8\frac{120}{1947}$	2	0

* I consider such to be under returns, independent of the mistake made by including lambs in the enumeration.

† With the exception of the error arising from the return of lambs—which perhaps would not greatly vary the proportionable result.

‡ It is proper to say that though I designed to take the highest averages, I did not go through a formal reckoning of the average in every county in the eleven States. I took those which appeared the highest, after a somewhat careful general inspection.

‖ Excluding the fractions of the ounces in preceding column.

TABLE No. 3—(Continued.)

State.	County.	Average Weight of Wool per Sheep. Lbs. Oz.	Total average of the Counties given. Lbs. Oz.
South Carolina	Beaufort	2 12 1094/1375	
	Darlington	2 4 504/3041	
	Georgetown	2 0	
	Richland	1 12 1180/1511	2 3
Georgia	Bibb	2 3 306/1178	
	Murray	1 15 114/578	
	Twiggs	2 10 574/2013	
	Ware	2 1 53/49	2 3¼
Florida	Escambia	1 11 97/485	
	Leon	1 13 809/899	
	Nassau	2 13 20/109	2 1⅔
Alabama	Blount	1 15 19/51	
	Jackson	2 6 6390/6551	
	Autauga	1 15 193/1889	
	Greene	2 0 2608/4749	2 1
Mississippi	Claiborne	2 7 2711/6527	
	Hinds	3	
	Perry	2	
	Warren	2 7 185/953	2 7½
Louisiana	Concordia	2 15 751/767	
	St. Helena	1 7 1361/1513	
	St. Tammany	2 1 23/25	
	Washington	1 14 10/21	2 1¼
Tennessee	De Kalb	2 2 182/729	
	Franklin	2 7 6179/9531	
	Smith	2 0 891/1309	
	Wilson	2 2 15046/19309	2 2¾
Kentucky	Bourbon	2 1 13897/23719	
	Clarke	2 11 9133/20953	
	Lawrence	2 13 2955/6821	
	Scott	2 6 983/1119	2 7¾
New-York	Westchester	2 10 3074/20043	
	Ulster	2 5 895/6355	
	Saratoga	2 3 5766/6041	
	Orleans	2 2 42154/69563	2 5

Taking these averages as the test, it would appear that the difference between the average products of the Southern States and New-York is, in some instances, in favor of the former. Kentucky in the middle, and Mississippi in the extreme South, exceed the average of New-York.

It is proper to say, however, that various local circumstances may have effected these results, and that taking the average of a considerable number of counties, in the several States, would essentially vary them. Notwithstanding this, the testimony which they offer is important, and becomes more so regarded in connection with another circumstance. The comparative statistics of the extreme Southern States themselves show that in a majority of cases their best products of wool come from their Southern and warmer counties.

Of the four counties in Louisiana, the product of which is given above,

the most northern lies between the 31st and 32d degrees of latitude, and all of the other three south of latitude 31°. St. Tammany, which exhibits the second best product, borders on Lake Pontchartrain. The State extends north to latitude 33°.

In Florida, all the counties given lie in the same latitudes.

Mississippi extends north to latitude 35°. All the counties given are south of 32° 30′, and one in latitude 31°.

In Alabama, extending north to the same latitude with the above, two of the counties given are in the northern or mountain region, and two of them south of 33°.

In Georgia, (same northern line,) one of the counties given is in the extreme north, two south of 33° and one in latitude 31°, being the county in which lies the major portion of the Great Okefinokee Swamp!

In South Carolina, two of the counties (both bordering on the ocean) are in the low, marshy, tide-water region; and the other two are in the central region.

In North Carolina, two of the counties given join the ocean; one is on Albemarle Sound, while one lies in the central and northern portion of the State.

In comparing the product of wool in the Southern States with that of the Northern—and more particularly with that of New-York—we must not lose sight of the fact that in the latter wool growing has become an important business, and is reduced to a system. The sheep are kept in pastures, and are sheared at regular intervals. In the Carolinas, Georgia, and the Gulf States, precisely the reverse of all this was generally true, at least up to the year 1839. The sheep were little cared for; were suffered to breed promiscuously; and they roamed at large through forests, where, as the warm season advanced in the spring, their wool, beginning to detach itself, was left on shrubs and brambles, and in not rare instances considerable portions of it were thus lost prior to shearing.*

Giving their due weight to the preceding facts, the defects in the census, etc., it is, I think, undeniable that they account for all the deficiency in the average product of wool per sheep in our most southern States, compared with that of New-York, as set forth in Table No. 2. Indeed, sir, my own convictions are decided, and the facts reported appear to fully sustain them, that warmth of temperature, at least to a point equaling the highest mean temperature in the United States, is not injurious, but absolutely conducive to the production of wool. The causes of this are involved in no mystery. Warm climates afford green and succulent herbage during a greater portion of the year than cold ones. Sheep plentifully supplied with green herbage keep in higher condition than when confined to that which is dry. High condition promotes those secretions which form wool. Every one at all conversant with sheep well knows that if kept fleshy the year round, they produce far more wool than if kept poor. A half a pound's difference per head is readily made in this way. Within the maximum and minimum of the product of a sheep or a flock, the ratio of production always coincides with that of condition.

I have dwelt on this point at great and perhaps tedious length, sir, as the results set forth in the United States Census, unexplained, would clearly point to a different conclusion from that to which I have arrived. To invalidate testimony, ostensibly so certain and reliable, as well as to combat deep-rooted prejudices, I have deemed it necessary to scan thoroughly the accessible facts in the case.

* I make no account of difference in breeds, as affecting the product of wool between the South and North. The grade Merinos, not uncommon in New-York, would produce far more wool than the "natives," the principal sheep in the South in 1839. But the latter would equal or exceed the product of the numerous Saxon flocks of New-York.

LETTER II.

EFFECT OF CLIMATE, CONTINUED.

Effect of Climate on quality of Wool...Warmth of Climate renders Wool coarser—Reasons...Effect of Herbage...Opinions of Youatt—Doctor Parry—English Staplers—Writer...Can the tendency to grow coarser be resisted?...Opinions of Youatt—Lasteyrie—Mr. Lawrence...Experiment in Australia—Cape of Good Hope—South of Illinois—Kentucky—Tennessee—Mississippi—New-York...Warm Climates render Wools softer and longer, thus adding materially to their value...Proved to be the case in Australia...Testimony of English Wool-factors and Staplers...Same effect produced in the United States...Testimony of Mr. Cockrill.

Dear Sir: We come now to discuss the effect of Climate on the quality of Wool.

There can be but little doubt, other things being equal, that the pelage of the Sheep and some other animals, becomes finer in cold climates and coarser in warm ones. This is usually attributed, by theoretical writers, to the effect of cold and heat in contracting or expanding the pores. This may have some effect, but to suppose that the delicate tissues of the skin can act, to any great extent, mechanically, in compressing the harder and highly elastic ones of the hair or wool, or compel their attenuation so as to permit their escape through diminished apertures, like the process of wire drawing, is, it seems to me, to assume that matter acts contrary to its ordinary laws. I am rather disposed to look for the causes of this phenomenon, in the amount and quality of the nutriment received by the animal. It was stated, in my preceding letter, that warm climates, by affording succulent herbage during a greater portion of the year, maintain in greater activity those secretions which form wool, and thus increase the quantity or weight of the fleece. The weight is increased by increasing the length and thickness of the separate fibres, just as plants put forth longer and thicker stems on rich soils than on poor ones.

Mr. Youatt, in his excellent and much quoted work on Sheep, after discussing and admitting, to a certain extent, the influence of warm temperatures in rendering wool coarser, says:

"Pasture has a far greater influence on the fineness of the fleece. The staple of the wool, like every other part of the sheep, must increase in length or in bulk when the animal has a superabundance of nutriment; and, on the other hand, the secretion which forms the wool must decrease like every other, when sufficient nourishment is not afforded. When little cold has been experienced in the winter, and vegetation has been scarcely checked, the sheep yield an abundant crop of wool, but the fleece is perceptibly coarser as well as heavier. When frost has been severe and the ground long covered with snow—if the flock has been fairly supplied with nutriment, although the fleece may have lost a little in weight, it will have acquired a superior degree of fineness and a proportionate increase of value. Should, however, the sheep have been neglected and starved during this prolongation of cold weather, the fleece as well as the carcass is thinner; and although it may have preserved its smallness of filament, it has lost in weight and strength and usefulness. These are self-evident facts, and need not be enforced by any labored argument."*

Doct. Parry, a correct and able English writer, remarks:

"Sheep breeders have observed a sort of gross connection between the food and quality of the fleece. . . . The fineness of a sheep's fleece of a given breed is, within certain limits, inversely as its fatness, and perhaps also (although I am not certain on this point) as the quickness with which it grows fat. A sheep which is fat has usually comparatively coarse wool, and one which is lean, either from want of food or disease, has the finest wool; and the very same sheep may at different times, according to these circumstances, have fleeces of all the intermediate qualities from extreme fineness to comparative coarseness."

* Youatt on Sheep, p. 70.

In an examination before the English House of Lords, in 1828, various eminent staplers* testify, most decidedly, to the deterioration (in fineness) of the British wools and their increase in length of staple, "since the introduction of artificial food and the adoption of the forcing system."

My own observations fully corroborate these positions. I have examined, in repeated instances, with a good microscope, the wool of individual sheep in my flock, taken in seasons when they have maintained a high condition, and in others, when, from some incidental cause they have been in ordinary or poor condition, and the difference in length and fineness is, uniformly, distinctly perceptible.

If the sheep breeder in warm climates can take advantage of the tendency to produce greater quantities of wool, following that supply of succulent herbage throughout the year which Nature has placed at his disposal, and at the same time, by any unexpensive means which he can employ, combat the correlative tendency to increased coarseness of fibre, he has most assuredly, other things being equal, an entire advantage over the breeder in colder regions.

We come now to the important inquiry, Can this latter tendency be successfully combated; or, in other words, can wool of any desirable fineness be produced in countries as warm, for example, as Louisiana, Mississippi, &c.?

Let us examine Mr. Youatt's testimony on this point also. He says:

"Temperature and pasture have influence on the fineness of the fibre, and one which the farmer should never disregard; but he may, in a great measure, counteract this influence by careful management and selection in breeding. . . . A better illustration of this cannot be found than in the fact that the Merino has been transplanted to every latitude on the temperate zone, and some beyond it—to Sweden in the North and Australia in the South—and has retained its tendency to produce wool exclusively, and wool of nearly equal fineness and value."†

Mr. Lasteyrie, equally good authority, uses the following language. When he speaks of the preservation of the breed in its "utmost purity," we are undoubtedly to understand him to refer as much to the fineness of the wool as any other point, this being the distinguishing mark or excellence of the breed.

"The preservation of the Merino race in its utmost purity at the Cape of Good Hope, in the marshes of Holland, and under the rigorous climate of Sweden, furnish an additional support of this, my unalterable principle: fine wool sheep may be kept wherever intelligent breeders exist."‡

Samuel Lawrence, Esq. the head of the great Lowell Manufacturing Company, in Massachusetts, who, by his vast purchases of fine wool in all parts of the United States for a long term of years, and his intimate practical acquaintance with the quality of the article, is entitled to have his opinion on this point regarded as of as great weight as that of any other individual, says:

"That the properties of wool are affected by herbage and soil, I have not a doubt, and were it not invidious, I would name some sections where wool growers are greatly favored by Nature. One thing is certain, whatever may be the character of the soil, where there are good shepherds there is sure to be found good wool. By judicious selections and crossing, I believe a breed may be reared which will give four pounds of exquisitely fine wool to the fleece."‖

This last sentence of this important extract, though not bearing so particularly on the point under examination, is recorded in its original connection for subsequent reference.

Australia and the Cape of Good Hope being cited by the distinguished

* Youatt on Sheep, p. 71, where the names and testimony of these individuals are given, and more at length in Bischoff on Wools, &c. vol. 2, p. 118 to 200. † Pp. 69—70.
‡ Lasteyrie on Merino Sheep, p. 101. ‖ Letter of Mr. L. published in "American Shepherd," p. 436.

English and French writers above quoted, as offering instances of the perfectly successful acclimation of Merinos, without deterioration of their wool, in warm climates, it may be well to inquire a little more particularly what the climate of those countries is; and what, if any, the other circumstances connected with them, having an influence on the quality of the wools grown in them.

Port Jackson, in Australia, in the vicinity of which the Merinos were first introduced, and are now extensively bred, lies in 33° 55′ South latitude, corresponding as nearly with the latitude of Georgetown, South Carolina, as that of any other important point in our country.* In describing this region (New South Wales) Malte Brun says:

"The coast itself is high but not mountainous; and it is partly shaded by trees of gigantic size. Toward the south-east a great part is covered with coppice; much also is occupied with marshes. About Botany Bay† the soil is black, rich and exceedingly productive in plants. The north-east part seems lower. The coast is covered with mangroves. . . . The heat of December rises to 112° Fahrenheit. The forests and the grass have been known spontaneously to take fire.‡ The North-west wind, like the Khamseen of Egypt, scorches the soil and reduces it to a light dust. . . . Notwithstanding these disadvantages, the climate is very healthy, and very favorable to population. . . . Those parts in which different trials have been made have rather too warm a climate for common barley and oats, though these grains have been found to succeed tolerably well on the poorer soils. . . . All the vegetables grown in England are produced in the English colony. . . . Peaches, apricots, nectarines, oranges, lemons, guavas, loquets, cherries, walnuts, almonds, grapes pears, pomegranates and melons attain the highest maturity in the open air."‖

The country, most of it, is remarkably deficient in water,§ though many portions are subject to destructive inundations.¶ Its drouths are unequaled for their duration and intensity in, perhaps, any inhabited portion of the globe.** Its vast plains, occasionally highly fertile, but more usually, only in detached spots, afford pasture throughout the year.

The physical features of this country, its system of sheep husbandry, etc. will be more particularly alluded to hereafter.

The English first introduced into this remote possession the coarse hairy sheep of Bengal. In the short space of three years these were so far changed by the effect of the climate and other circumstances, that their hair was entirely gone, and was succeeded by a fleece of wool.†† The South-Down and Leicesters were subsequently introduced, and their crosses with the Bengal sheep soon became as fine as the pure bloods of the former. At length some Merinos were imported by the colonists, and, says Mr. Youatt, "The experiment was satisfactory beyond their expectation. The third or fourth cross with the then prevalent sheep of the colony produced an animal with a fleece equal to that of the pure Merino in Europe; and the wool of the pure blood seemed to improve as rapidly as the native breed had done."‡‡ In 1810, the export of wool from Australia and Van Dieman's Land was 167 lbs.; in 1833, it had reached 3,516,869 lbs.‖‖ In 1843, it amounted to 16,226,400 lbs.§§

The following, from a table in McCulloch's Dictionary of Commerce, will show the current prices (reduced to American currency) of some of the imported and domestic wools, in London, March, 1834:

	$ cts.	$ cts.		$ cts.	$ cts.
SPANISH.....per lb.	— 60 to	— 77	ENGLISH:		
PORTUGUESE	— 44 "	— 62	North & South-Down. per lb.	— 44 to	— 48
GERMAN, SAXON, &c	— 48 "	1 15	Leicester.....	— 33 "	— 44
AUSTRALIAN	— 50 "	1 00	Lincoln, Cotswold, Romney Marsh.....	— 40 "	— 44

* Georgetown is perhaps half a degree nearer the Equator.

† This place is twelve miles south of Port Jackson.

‡ Malte Brun cites Collins (an author frequently quoted in relation to New South Wales) for this strong and, perhaps, exaggerated assertion. ‖ Malte Brun, vol. i. pp. 600—605.

§ Spooner, Youatt, etc. ¶ Malte Brun. ** See McCulloch's Commercial Dictionary.

†† Youatt on Sheep, p. 184. Spooner, Diseases of Sheep, p. 62.

‡‡ Ib. p. 184. ‖‖ Ib. et Spooner. §§ Spooner.

It will be seen from this, that the best Australian wools already excelled the best Spanish, and were more than midway between them and the best Saxon. When we consider the almost infinite difference in the care, both in breeding and management, bestowed on the Saxon and Australian sheep, it shows most conclusively the adaptation of the climate of Australia to the production of the finest wool—or, at least, that the adverse effects of its warm temperature, and the incidents to that temperature, are easily overcome. In Saxony, sheep are numbered, oftentimes their separate pedigrees registered, and each breeding ewe is stinted to a ram carefully selected with reference to her individual qualities. In Australia, where less capital and labor are employed, flocks of about three hundred breeding ewes*—where the country is destitute of timber, sometimes a thousand†—roam from one fertile and watered spot to another over the vast plains, in charge of the convict shepherd; and this system is followed throughout the year, including the tupping season. Three flocks are always penned together at night,‡ so that as many as nine hundred breeding ewes, of varying quality, must be promiscuously bred to, say, from thirty to thirty-five rams, running promiscuously among them.

The Cape of Good Hope is in south latitude 34° 23′ 40″.

Mr. Youatt, in describing the sheep husbandry of this region, overestimated, I think, the heat of the climate. Separated by lofty mountain ranges from the interior of Africa, the fertile regions adjoining the coast are not swept by its scorching winds, and the temperature is comparatively mild. "In a meteorological register kept at Cape Town, from Sept. 1818 to Sept. 1821, embracing a period of three years, the highest heat marked is 96°, the lowest 45°, Fahrenheit. The mean and annual temperature scarcely 68°—of winter 61°, of summer 89°."‖ But sheep and their wool suffer from the fine sands which are lifted and driven by the prevailing winds. Says Malte Brun, "the wind blows often from the south-east with great violence. Nothing can be secured from the sands which it drives before it; they penetrate the closest apartments and the best-closed trunks. At this time it is not prudent to go out without glasses, lest the eyes should be injured."§

Though the climate can scarcely be designated a "torrid" one, as Mr. Youatt speaks of it, the mean temperature of its winter (61°) conclusively shows that cold can have nothing to do here with rendering the wool finer by a contraction of the pores. If, therefore, it can be shown that the wool of the fine breeds does not deteriorate in quality, it sufficiently proves that Australia is not an incidental exception in the testimony which it presents on the point under examination, but that it illustrates the uniform operation of the physical laws which pertain to the growth of wool.

After one or two unsuccessful attempts, the Merinos were acclimated at the Cape by the English colonists. In 1804, the colony numbered 536,634 sheep. In 1811, there were 1,293,740. In 1810, the import of wool into Great Britain was 29,717 lbs.; in 1833, it was 93,325 lbs.¶

In Willmer & Smith's "Liverpool Annual Wool Report," for 1846, it is stated, "The shipments from this quarter (Cape of Good Hope) show great improvement, amply testified by the high rates the best flocks have commanded during the season. . . The best parcels now take rank with those from Australia."** The system of breeding and general management at the Cape closely correspond with those of Australia.

Let us now, sir, turn to the experience of our own country. I do not

* Cunningham's "Two Years in South Wales." † Ib. ‡ Ib.
‖ Malte Brun, vol. ii. p. 112. § Ib. vol. ii. p. 112.
¶ Youatt on Sheep, p. 184. ** Willmer & Smith's European Times of Jan. 4, 1846.

know that a sufficient number of experiments have been made as near the Equator as Cape Town and Port Jackson, to have their testimony regarded as entirely decisive on the point under consideration, but those have been made which throw much light on this question, if, indeed, any more is considered necessary. In the south of Illinois (Edwards county), in about latitude 38° 30′, the finest varieties of sheep were introduced by Mr. George Flower, about twenty years since, from which he has bred up an extensive flock. That gentleman says:* "No deterioration in the wool has taken place; on the contrary, the wool fibre is somewhat finer." I have myself seen various specimens of Mr. Flower's wool, of the clip of 1844, and it bore an excellent character for fineness and evenness.

In a letter which I received from Hon. Henry Clay, in 1839, he says: "I have for some years had only the pure Saxony at my residence; but I am now satisfied that I should have derived more profit from sheep producing a wool less fine.† The climate of Kentucky is, however, well adapted to the Saxon sheep." Mr. Clay's residence is in about latitude 38°.

Mr. Mark R. Cockrill, of Nashville, Tennessee, in a letter published in the American Shepherd,‡ says:

"I have about a thousand head of fine sheep, and from 400 to 500 long-wooled or mutton sheep. My Saxon sheep were imported in 1824 or '26—I cannot say which—and I find as yet no falling off in quantity or quality of their fleeces; on the contrary, I believe a little improvement on both points, and a little more yolk, when well provided for, which, you know, does not abound much in the Saxon breed. In addition, the fleeces are a little more compact than formerly—hence more weight; and, from our mild climate, *the staple has become longer*. . . I assert it to be a fact that the cotton region I am now in [Mr. Cockrill dates from Madison county, Mississippi, where a part of his sheep are kept], in about latitude 32° north, is better than any country north of it to grow wool, as the sheep can be kept all the time grazing, by sowing small grain; for, if grazed off, it quickly grows again in a few days; and the wool of the fine Saxon sheep in this climate is softer and more cotton-like than any I have ever seen, although I have samples from all parts of the world. I have traveled from this very place to Boston, sampling all the sheep of note on the way, and I found nothing on my journey or at Boston as good as the wool I had grown, and so said all the wool staplers whom I met with, and they were not a few. I presumed, in reality, that the blood of my sheep was no better than many I saw, but the superiority of my wool I ascribed to our climate, and the provision for the sheep of succulent food the year round.—The weight of my fleeces is fair—say from 3 to 5¼ lbs. each. . . Tennessee is not the true grass climate; about 28° north is the most congenial for grass: notwithstanding, our State is fair for pasture; blue and orchard grass, white and red clover, prosper pretty well. . . There is much country in Tennessee and other Southern States not fit for the plow, and would do admirably well for fine-wooled sheep, and can be profitably so employed. A small capital thus appropriated here in Mississippi would do better than cotton growing at present prices."

Nashville is in about latitude 37° 15′; and Madison county, Mississippi, is about half a degree farther north than mentioned by Mr. Cockrill, viz. extending from 32½° to 33°; its county seat (Canton) being more than a degree nearer the Equator than Port Jackson in Australia, and about two degrees nearer than the Cape of Good Hope!

Mr. Morrel, the compiler of the "American Shepherd," has obtained specimens of Mr. Cockrill's wool, and he says of them, "Judging from the samples, the conclusion is inevitable that little or no deterioration has been produced by the climate."‖

This testimony of Mr. Cockrill is very important, both from the length and extent of the experiment. I have no doubt of the perfect correctness of his assertion that his wool has improved in those low latitudes; but the cause assigned by him cannot be received as the correct one, so far as the increased fineness of the fibre is concerned. The improvement in this particular, under a system of feeding which has "increased" both the "quan-

* In a letter published in the Prairie Farmer.
† Mr. Clay here alludes to the Merinos.
‡ P. 409.
‖ American Shepherd, p. 41.

tity" and the "yolk" of the fleece, cannot be ascribed to the climate, nor to the feeding itself. It is undoubtedly owing to Mr. C.'s system of breeding and selection, a point which will be fully discussed hereafter.

If feed or condition exercise the principal influence on the fineness of wool (that is, within the range of variation to which it is subject on the same individuals), it follows that the effect may be produced in any climate, for high condition throughout the year is attainable in the most rigorous ones, by the supply of plentiful and rich food. The wool secretions are incident on condition—fatness, however superinduced.* It again follows that if wool of the highest degree of fineness (for the breed) can be produced in New-York, although the sheep is kept in a decidedly fat state throughout the year—quite as fat as it would become, grazing on green feed all the year round—that wool of equal fineness can be produced by the observance of the same influencing conditions (apart from feed) by the southern breeder.

Here again, undeterred by any considerations of what I deem a false modesty, I shall offer facts founded on my own personal experience as a sheep breeder; and I would remark, once for all, that throughout the whole of these letters I shall never so far prefer *beliefs* founded on the assertions of others, to *actual knowledge*, based on facts repeatedly and constantly brought under my personal inspection, for a number of years, as to suppress the latter, to rely solely on the former.

I have succeeded, in repeated instances, in producing an exquisite quality of wool, decidedly above the average of the breed (Merino) in the heavy fleeces of sheep kept fat the year round. I have made it a sort of a test latterly, in the selection of rams, to choose only those which not only carry heavy fleeces, in any condition, but which, in the highest, yield a wool equaling the choicest samples to be found on this variety. These facts will, by and by, be placed in a definite and tangible form, by the recorded testimony of the scales and the microscope.

But though the natural effects of warm climates and their incidents, to increase the bulk or coarseness of the fibre, is one which can easily be resisted, they work a change of another kind in the character of wool. They cause a longer fibre and a greater softness of staple. The effect of succulent nutriment during the year in increasing the amount of the wool will exhibit itself; but the skill of the breeder can so far regulate its action, that the increase is in the length, rather than in the diameter or bulk of the fibres. It is not difficult to conjecture why a staple of more rapid growth, supplied to excess with the secretions which enter into its composition, unexposed to great and rapid variations of temperature, should retain a greater degree of softness than one produced under opposite conditions. But, whatever the causes of these phenomena, their existence is placed beyond a doubt.

The increased *length* of staple, resulting from the nutriment of warm climates, has been sufficiently adverted to. The following statements made by some of the most eminent wool-factors, staplers, etc. in England, before a Committee of the House of Lords, in 1828, place the other point beyond controversy.†

Mr. Henry Hughes, wool-broker, London, says:

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* No one has asserted, so far as I am informed, that dry feed will produce less wool than green feed, if the same degree of fatness is kept up. On the other hand, the rich cereal grains, oil-cake, &c. (without some of which a high degree of fatness cannot be maintained, on dry feed alone, during the four or five months' winter in latitudes north of 42°), might be supposed to be quite as conducive to the production of wool as grasses.

† For extended minutes of this very interesting investigation into the state of the wool-trade, &c. &c. in Great Britain, see Bischoff on Wool, &c., vol. ii. p. 118 to 200.

"Latterly they (Australian and Van Dieman's Land wools) have been of varied qualities, but all possessing an extraordinary softness, which the manufacturers here so much admire that they are sought for more than any other description of wools, from that peculiar quality, which is supposed to arise from the climate alone. They are known to require less of the milling or fulling power than any other descriptions of wools. . . They are better adapted than the German wools to mix with British wools, because the superior softness which I have stated gives a character, when mixed with English wool, that the other does not, from the hardness of the fibre."*

Mr. Stewart Donaldson, merchant, London, says:

"I have no hesitation in pronouncing that the wools of New South Wales and Van Dieman's Land are decidedly preferred to the apparently similar descriptions of German wool. . . . They have a softness and silkiness about them which, when worked up into cloth, shows itself more distinctly than in the raw material. I conceive that it is dependent on the climate alone. I am of opinion that wool of that quality could not be produced in any part of Europe."†

Mr. Thomas Legg, wool-stapler, Bermondsey, says:

"There are some of these wools of very beautiful quality, as good as any of the German wools."‡

Mr. Thomas Ebsworth, wool-broker, London, says:

"The peculiarity of the climate of New South Wales appears to have a very great effect on wool, so as to reduce it from a harshness to a very fine texture."‖

This was the substance of *all* the testimony on this particular point; and when it is understood that the investigation was an issue between rival interests, where all the facts were thoroughly sifted, the fact that the above assertions were undisputed shows that they were considered of an undisputable character.

Allusion has already been made to the loose and careless system of sheep-breeding, etc. in Australia, compared with that in Germany. Taking this into consideration; taking also into consideration that the flock furnishing the best wool in Australia (Capt. McArthur's) is composed of grade sheep (Bengal and English, graded up with Merino and Saxon rams), the trifling effect of climate is made more strikingly to appear.

The statements of Mr. Cockrill in relation to the softness of the wools grown in Tennessee and Mississippi, sustain and are sustained by those above given; and they go to show that it is the result of a general law and not of any peculiar local influences peculiar to Australia

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MADDER—Information Wanted.—We extract from a letter dated Columbia, Arkansas, the following:

"You have requested your subscribers to call for information on any particular agricultural subject which they might suppose would be useful. I will thank you for any you can give on the *cultivation of madder* in the United States—where seed may be had, &c."

Our subscriber's request shall have due attention when we can get time. In the interim, to show that we are in earnest, the Publishers of The Farmers' Library authorize us to offer, as a premium, the two volumes into which The Farmers' Library and Monthly Journal of Agriculture for the first year are handsomely bound up. They each embrace about 600 pages, and one of them contains works worth $50 to any cultivated, inquiring farmer—if, indeed, it be not out of all character to estimate knowledge in dollars and cents. This premium to be given to the best and most complete essay answering the above inquiries, and to be awarded by a Committee to be appointed by the Farmers' Club of New-York.

* Bischoff on Wool, &c. vol. ii. pp. 182-3. † Ibid. 183-4. ‡ Ibid. 184. ‖ Ibid. 184.

PLANTING IN SOUTH CAROLINA AND IN MISSISSIPPI.

EXPENSE AND RESULTS COMPARED.....No. 2.

Mr. Editor: I have no wish to be drawn into a controversy on the vexatious question of the *Protective Policy*, nor have I any desire to involve others in it; but I feel called upon to reiterate the statements made in my former communication in regard to the product of cotton and corn on the lowlands of Mississippi and Louisiana. I do not wish to be understood as speaking or writing in reference to the product of this particular section, for it is well known that for the last six or seven years the product of cotton here has been anything but satisfactory. But I do know that there are plantations, *and a good many of them*, on the lowlands, that have averaged *nine bales to the hand for a series of ten years*, and I know some plantations that have done still better. I therefore confidently assert that the average product per hand, on *all* well-regulated plantations not subject to inundation, has exceeded eight bales *for the last ten years;* and I am quite as confident in asserting that the average product of corn per acre, on the same plantations, has been *over thirty bushels.*

In reference to what I said in my last on the subject of the injury to the planting interest from the Protective Policy, allow me again to say that, if the cotton planters on the lowlands of Mississippi and Louisiana are *oppressed* by high duties, they do not seem to be aware of it; and it is only among *political* cotton-planters that we hear of this "*oppression*" in this region. I did not mean to admit that the cotton-planter's expense of clothing for his people was enhanced in proportion to the duty; I simply meant to say that *if the whole duty* was added to the cost of the article, and paid by the consumer, the "oppression" was not so great as to be *onerous.*

I am aware that there are other articles which are consumed by the cotton planter, besides clothing, that are slightly affected by the Tariff; but I do contend that as cotton-planters we have no just ground of complaint against the Protective System, even though many, *nay, all* the articles we consume are enhanced in price by it. If the domestic fabrics are rendered dearer to the consumers here, they are reduced in price to the consumers elsewhere; and thus the consumption of our staple is extended and enlarged, and the ultimate interests of the planter promoted. But I cannot admit that the price to the consumer here is enhanced to anything like the extent of the duty; for to yield this would be to admit that many foreign fabrics are sold far below the cost of production, and far below, in some instances, the *cost of the raw material.* I contend that *many* of the articles consumed by the planter have been *reduced in price* by the Protective System; and I boldly assert that, so far as my acquaintance extends, the most intelligent cotton-planters, who are far from the influence of political aspirations, do not think their interests injuriously affected by the system. True, my acquaintances may be more dull of comprehension, or less quick in their perceptions of injury and oppression, than they should be. They may be robbed, and yet, not "missing what is stolen," deem themselves "not robbed at all."

If the cotton-planter gets his bagging and rope for less than *one-third* of what he paid prior to the Tariff of 1824 and '28—and an article, too, that protects his cotton better, on account of its superior fabric, and sells for more, on account of its greater weight; if he gets his negro shirting, of better quality, for *less by half* than he formerly paid, and *less than he can manufacture it, by his own labor from the raw material grown by himself;* if he gets Kentucky linseys and jeans, of a more durable quality, and for half the price he formerly paid (before the Protective System was adopted) for English plains and kerseys; and if he gets his plows, hoes, axes, nails, files and spades, for half what they formerly cost him, and his shoes for a third less, he may be "*oppressed,*" but I really have not been able to see how or where!! And I am disposed to doubt whether he will get these articles at a lower price under the Tariff of '46 than he paid for them

under that of '42. Most of the articles consumed by him are so reduced by domestic competition as to admit of no greater reduction in price by the change to Free Trade. There may be occasional reductions from glutted markets, but nothing permanent, especially if the *quality* of the domestic fabric be compared with the foreign. All this, however, we will be able to test, for the new Tariff will last long enough to afford us the opportunity, though I am not willing to admit that it will be the *permanent* policy of our Government. Salt will undoubtedly be reduced in price some 10 or 15 cents a sack. Iron will not, for a reason that will alike operate on sugar. I am *now* free to admit that the price of the latter is not likely to be so reduced as to interfere with new investments of capital and labor in its production. But if the price to the consumer is not reduced, where the benefit of the reduction of duty? Will not the reduction go into the pocket of the foreign producer? The price of bagging cannot be lower under the new Tariff; for it cannot be imported *free of duty* and sold for less than the Louisville prices of last summer and spring, to wit: 7¼ to 8 cents; and but for the protective system, we never should have had domestic bagging, but still have been dependent on the foreign fabric, the quality of which is fully one to one and a half cents per yard inferior to the domestic.

I therefore cannot see wherein the cotton-planter is to be benefited by the new Tariff; and I may be pardoned for my obtuseness, but not suspected of *willful* blindness.

Why is it, that with the opening of the ports of Great Britain, and the immense demand for our bread stuffs consequent upon another short crop in Europe, and the almost total and universal destruction of the potato crop, there should be so little importation of foreign goods? Why is it that exchange on England is so far below its legitimate *par?* If our new Tariff has invited importations, why is it that we do not see the effect of large orders on the rate of exchange? The reason is obvious: our own importers believe the country will buy no more than it will consume; and they are willing to leave the exporters to bring back their returns in gold. Is the cotton-planter to be benefited by this? If returns could be made in British goods, with any reasonable hope of profit, surely there would be no returns in gold. Is it not fair, then, to assume that a greatly enlarged consumption will not necessarily follow a modification of the Tariff of '42? That our markets may and will be glutted by foreign fabrics is possible, nay probable, and the price of commodities reduced thereby; but it will be by British manufacturers, to get clear of surplus stocks; and the effect will be but *temporary.*

But I have already written more, much more, than I intended. I hope S. B. will not attribute to me a desire to prolong a controversy which is not likely to result in conviction on either side. My only object is to satisfy him that out of Carolina there are persons who do not hold to *the Carolina doctrines.*

I am free to confess that there is the strongest probability the "*true cotton region*" will be found farther north than 31° 30′—nay, I am disposed to think that for the next ten years it will be found to be north of 33°, and in ten years after, *north of* 35°. I believe the whole region south of 33° will be, to a great extent, abandoned as a cotton producing country. We have fearful indications that this will be the result; and *how far north* the culture may be pushed or found advantageous, time will soon tell.

Before I conclude, let me assure S. B. that I had no wish by my first communication to invite South Carolina planters to migrate to this region; I could not conscientiously do it. For the last seven years in this parish we have not averaged 5 bales (or 2,000 lbs.) to the hand, and this year *not one and a half bales.* It would be preposterous if not wicked and cruel to invite planters from any section, into this region, and I have too high an opinion of the chivalry of the Carolinians to expect them to settle among the *repudiators* of our sister State.

X. Y. Z.

Rapides, La., 17th November, 1846.

P. S. I owe you an apology, Mr. Editor, for this long communication, the greater part of which may be deemed improper in a periodical such as yours; but I promise you this shall be my last.

The Editor trusts that no friend can misunderstand him. The object of his first and greatest anxiety is, that the readers of this Journal, and American agriculturists generally,

should be persuaded that theirs is, even beyond all others, an employment of *the mind*; and that, as Liebig says, it must depend hereafter for all material improvement, on the application of science to its practice. On this depends both its dignity and its profit. We earnestly desire, therefore, to see American cultivators rise in the strength of their numbers and the value of their products, and *extort* from Government their full proportion of the means for the *diffusion of knowledge* connected with *their* pursuits. This is a theme which of itself opens a wide field for discussion, and in which, we lament to say, we have not had the benefit of the brighter lights of our brethren of the agricultural or the general press of the country. Yet can any one, even the most careless inquirer, fail to perceive that on no one thing does the prosperity and true glory of our country depend, in anything like the same proportion that they do on the *general enlightenment of the landed interest?*

Again: We desire, also, to describe all useful improvements in the tools and machinery of Agriculture, and to present the result, as far as possible, of all field experiments—not to excite vulgar, senseless amazement at the sight of what can be done, but, by accompanying such extraordinary results with plain philosophical explanations, show in that way on what principles they depend. Here, again, is another field for practical inquiry and observation, which demands much space and all the aid of the best assistance to do it justice.

We are far, very far, from failing to perceive that the respectability and the success of the cultivator are connected with his knowledge of *the bearing of the laws* on the welfare of his employment. No one can be more sensibly impressed than we with the truth of the fact that there is between national legislation and national manners and well-being, *a constant, indissoluble connection.* It would be almost impossible to overestimate it, in extent or influence. The spirit of public legislation in this country, for years past, and under all parties, is a base preference for and promotion of *military* over *civil services and virtues!* such as well becomes despotism, where the throne is to be upheld by the bayonet, against the progress of reason and philosophy. In vain have we implored the coöperation of abler pens in exposure of this degenerate prostitution of public sentiment and public legislation. Not an Editor nor patriot writer comes to our assistance. We point hastily at these objects to show that this Journal, being alone in this path of public duty, we have need of much space to endeavor to persuade the friends of Agriculture that the plant must be watered at the root—that the *rising generation* must be instructed in the application of the arts and sciences to field practice, and that for this they have a right to demand ten dollars for every *one* that is applied, of their money, to any other sort of science or instruction. We have need, too, of much space to keep way with the progress of practical improvements in the machinery and processes which discovery brings to light, and which experience and philosophy prove to be expedient and profitable. *Hence it is* that we are compelled to be anxious not to have our pages engrossed by the discussion of questions in political economy, which, especially the doctrine of protection, being connected with the struggles and the ascendency of parties, find room and welcome in every village paper in the Union, while scarcely one of them, even those which are exclusively dependent on country support, will come to our aid in claiming for *Agriculture* the establishment of schools and academies for instruction in *its elementary and practical principles*, or any sort of public care and consideration. Well we know, and we are proud to say, that we are honored with the patronage, whether many or few, of a *class of readers* qualified by every attainment and faculty, to throw the fullest lights on both sides of the vexed question: How far is it expedient and wise to invoke the powers of Government to influence the profits of labor and capital, over and above such duties as may be indispensable to an economical administration of Government? We are, moreover, proud to refer to the temper and spirit of the respected correspondents who, we dare say, almost insensibly to themselves, have glided more largely than they had intended, into that topic; and were it certain that the same temper and limits would always be observed, far from discouraging, we should invite, such statements of important facts and such conflicts of reason, on principle. We would do it were it only for that highest of all pleasures, the intellectual gratification to be derived by every liberal mind from witnessing the manly and the gentlemanly conflicts of cultivated intellects. On this, as on

every subject to which the mind can find time to turn its attention, the prayer of well constituted mind will be for light—more light. Oh that we could witness one-tenth as much zeal on the subject of *Agricultural Education* as is everywhere displayed for and against protective duties! We doubt not we have said enough and even more than was necessary, to make curselves understood. We presume not to shut our pages against discussion so limited and well managed as that with which they have been honored on this occasion; but every considerate reader knows how hard it is to set limits, when they are once opened, and how invidious to criticise the language into which the most liberal minds may be honestly betrayed in the warmth of controversial discussion.

NEWCASTLE COUNTY AGRICULTURAL SOCIETY—Its Influence, Officers, &c.—Few Societies for the promotion of Agriculture have been conducted with so much zeal, judgment and perseverance; nor has any made its influence more visible in the improved aspect, productiveness and value of the country over which it has operated.

We very much doubt whether, in any part of Pennsylvania or New-York, the progress of improvement has been so marked—the cultivation so neat and thorough—the principles of improvement better, if so well, understood—or the appreciation so steady and decided in the selling price of the lands. Nor is there any section of country where agricultural melioration may be more distinctly traced to the effects of association for these purposes. Out of that association have grown discussion, comparison of opinion and experience, the exhibition of the resnlts of experiments conducted with intelligence, and the patronage and perusal of agricultural journals, &c. Among these last it would be unjust, in this connection, not to refer particularly to the Farmer's Cabinet, published close at hand, and conducted with singular judgment and discretion, by Mr. Tatum. We may frankly add that we should need no better proof of a culpable insensibility to the value and the pleasures of *knowledge*, in his own calling, on the part of any landholder in Delaware or Pennsylvania, than to know that he was not a patron of the Farmer's Cabinet. It might be deemed invidious to refer, especially too, to the active and untiring zeal of Dr. Thompson, of Wilmington, for the beneficent results of which we have spoken, if it was not on all hands matter of notoriety and of applause. Some time since, the Doctor succeeded in his wish to retire from the Presidency, but, not weary of doing good, we are glad to perceive, by an account of the proceedings of the last meeting, that he consents to continue his valuable services in the no less useful station of Corresponding Secretary. At their late meeting, an evidence of their good judgment was evinced in changing and alternating the places of exhibition, and in separating the Horticultural Department from the Agricultural Society. Either branch is enough to tax as much judgment and attention as can be commanded for either, and both are worthy of much more than can generally be gotten for them.

James Canby having declined reëlection as President of the Newcastle Agricultural Society, at the Eleventh Annual Meeting in October last, the following officers were elected

President—John C. Clark.
Vice Presidents—Joseph Carr, John H. Price, Jas. J. Brindley, M. B. Ocheltree, Rathmell Wilson, Giles Lambson, Philip Reybold, William Rothwell, John Jones, George Tybout.
Cor. Secretary—Dr. J. W. Thomson.
Rec. Secretary—Bryan Jackson.
Treasurer—James Canby.
Counselor—Edward W. Gilpin.
Directors—Anthony Higgins, Samuel Canby, Z. B. Glazier, John W. Andrews, Dr. R. M'Cabe, Richard Jackson, William Robinson, Henry Latimer, James N. Cleland, Henry Du Pont, J. S. H. Boies, Jesse Gregg, Philip Reybold, Jr., Wm. Tatnall, William S. Bouldin, John Higgins, Francis Sawdon, Edward T. Bellah.

Kiln-dried Corn Meal.—A new commodity has been introduced into Buffalo market, in the shape of kiln-dried corn meal, which bids fair to become an important article in trade. It is manufactured at Toledo, where is erected an apparatus capable of turning out 2,400 bushels per day, and it is put up in very neat packages similar to flour.

CULTIVATION OF THE ORANGE.

(Concluded.)

PROPAGATION.—It is said that plants of the orange and lemon—the same may not hold good of the other species—raised from seed, and never grafted, produce the best crops, both in quantity and quality; but these trees, when old, become so thorny that it is troublesome to gather the fruit. If it be sired to have any particular variety of fruit, grafting or budding is a means of doing so with certainty. These operations also cause the plant to fruit at an earlier age.

STOCKS.—The citron stock is the best for orange, lemon-citron, and probably for all the species. It grows more quickly, and causes the graft to fruit sooner, as it would appear: fortunately, then, the citron is the most easily propagated by cuttings. It is said that in the neighborhood of Seville, the stocks used are raised from seed of the bitter orange. Loudon says: "Shaddock stocks are the strongest, and next to these the citron." "Four years old is a good age for stocks." I conceive, however, that with all trees, but especially the orange—as the growth of the bark is very slow over wounds in the trees, unless covered with a composition to exclude the air—it is better, whether in budding or grafting, to follow the modern British practice of grafting—that of using small stocks.

BUDDING.—In budding, observe that the shoots from which you take your buds are round, the buds of these being much better and easier to part from the wood than of such as are flat and angular. Let the buds be inserted at the south side of the stock. By inserting more than one, you increase the chances of success. In a month it will be observable which have taken; then untie them. A head may be formed by cutting back the shoot from one of the buds—destroying the other if it have taken—to four buds or eyes. The stock should be taken off, if small, with a knife; if large, with a fine saw; the cut should be made in a slanting direction—not directly across the stock—the cut terminating immediately above the inserted bud. The operation of budding may be performed at any season.

GRAFTING.—This operation also may be performed at any time. Whip grafting is probably the best mode: grafting the stocks when small—in fact with the stock and graft as nearly as possible of the same size. A variety of the whip manner is described by Cushing, in which the top of the stock is left on. From the scion as for the common whip-graft, and then, without taking off the head of the stock, cut from the clearest part of its stem an equal splice as smoothly as possible; do not tongue the scion, but tie it on neatly and firmly with matting and clay, in the manner of a graft. When the scion begins to grow, remove the matting by degrees. I have sometimes seen the orange grafted under the surface of the ground, removing the earth from around the stock so as to lay it bare down to the roots, and inserting the graft as low as possible. When the operation has been finished, replace enough earth to completely cover the insertion of the graft. These grafts are to be treated as those inserted above-ground, except that they need not be clayed. Cut off the stock as directed under the head of budding.

SEED AND SEEDLINGS.—In raising plants from seed, if the seeds be received from abroad, they should be sown *immediately*, as they will not keep many *weeks* after having been taken from the fruit. The seed from rotten fruit is the best. It behooves every one who is interested in extending the cultivation of these plants to be on the look-out for the seeds of such fruit as come within their reach, whether the produce of the Colony, or imported, for we occasionally receive them from the Cape, and from the East.

If taken from the fruit, first dry them; then sow in light, rich earth, covering them about a quarter of an inch. In three weeks they will be up, if the weather be genial. When they shall have been up a month, transplant into pots, or, for want of these, small boxes, singly or into nursery rows 18 inches by 6, according to convenience. The pots or boxes should be sunk to the edge in the ground, to prevent the risk of the mould becoming dry by the sun or wind. The advantage of having single plants in pots or boxes is, that when you form your orangery, you may at once turn each tree out into its place without checking its growth. They are planted so close in the nursery rows, that they may be drawn up with straight stems. If preferred, the planting out into pots or rows may be deferred till they are half a year old, or more, taking advantage of the proper planting season, indicated by the dormancy of the plant. If, however, you plant in a dry soil, the removal should take place from April to June.

LAYERS.—In this country, where we have so little fruit whence to obtain seed, and the supply from abroad is so scanty, every means should be had recourse to for increasing the number of plants. Layering seems to be the common mode of producing them in St. Mi-

chael. This is done in the usual way, by bending down some of the lower shoots into a hole opened in the ground to receive them, leaving the point or end of the shoot above-ground, and confining the bent part in the hole with a hooked stick or otherwise, and well covering it with fine, rich mould, which has more or less of sand in it. The striking is much facilitated by taking a slice or two of bark off the shoot, at the part to be laid under-ground, at a bud, if possible, and making a cut half through it between the buried part and the parent stem. Both layers and cuttings may be budded or grafted to hasten the time of fruiting, or to produce a variety different from the parent tree.

Cuttings.—Henderson considers cuttings the quickest mode of getting [fruit-bearing?] plants, and has practiced it for 37 years past. His directions are as follows: "Take the strongest young shoots, and also a quantity of the two-year old shoots; these may be cut into lengths of from 9 to 18 inches. Take the leaves off the lowest part of each cutting to the extent of about 5 inches, allowing the leaves above that to remain untouched; then cut right across under an eye; and make a small incision in an angular direction on the bottom of the cutting. When the cuttings are thus prepared, take a pot and fill it with sand (sandy soil); size the cuttings so that the short ones may be altogether, and those that are taller in a different pot. Then, with a small dibble, plant them about five inches deep in the sand, and give them a good watering over-head, to settle the sand above them. Let them stand a day or two in a shady place, and if a frame be ready with bottom heat, plunge the pots down to the rim. Shade them well with a double mat, which may remain till they have struck root; when rooted, take the sand and the cuttings out of the pot, and plant them in single pots, in the proper compost. Plunge the pots with the young plants again into a frame, and shade them for 4 or 5 weeks, or till they are taken with the pots; when they may gradually be exposed to the light. From various experiments, I found that pieces of two year old struck quite well; and in place, therefore, of putting in cuttings six or eight inches long, I have taken off cuttings from ten inches to two feet long, and struck them with equal success. Although I at first began to put in cuttings only in the month of August, I now put them in at any season of the year, except when the plants are making young wood. By giving them a gentle bottom heat, and covering them with a hand-glass, they will generally strike root in seven weeks or two months. The citron is most easily struck, and is the freest grower; I therefore frequently strike pieces 18 inches long, and as soon as they are put into single pots, and taken with the pots, they are grafted with other sorts, which grow freely. I am not particular as to the time of striking cuttings." It may be observed that the citron tribe, like other fruit-bearing plants raised from cuttings or layers, though they may prove very prolific trees, yet seldom grow with that vigor, and produce such large fruit, as those propagated by budding or grafting on seedling stocks.

Training and Pruning.—Standard orange trees require very little pruning. Cut off any straggling, irregular branches, and where a vacancy appears in the head, cut back any strong free-growing shoots in the neighborhood of it, which will cause them to send forth smaller side-shoots to fill the gap. For plants against a wall or trellis, the fan manner of training is that generally adopted. In pruning these trees, it must be considered that the most useful blossoms of most sorts of citrus are produced in the form of terminating peduncles on the wood of the current year; and hence the grand object of the pruner ought to be to encourage the production of young wood in every part of the tree, by cutting our naked wood and shortening vigorous shoots where wood is wanting.

Insects.—In St. Michael they tar the stems occasionally to prevent injury from insects. Vegetable tar only should be used. "If insects do attack, strong lime water is as good a remedy as I know," says Shepherd, "to destroy them, which is to be thrown upon the tree with some force from a hand-engine." For want of which, it may be dashed against them from a cup or other small vessel.* †

Desiderata.—It may be of advantage to give the following list of what appear to be the most desirable varieties of the sweet orange, and which, if imported, would prove a very valuable addition to the fruits of the

* See Browne's Trees of America, p. 68.

† Inquiring of the Senators from Florida as to the staples and capabilities of that State, to which both have given the attention which becomes men of their high trust and position, we learned with sorrow that the culture of the Orange otherwise so promising and profitable, had been arrested and nearly destroyed by the ravages of an insect of which an intelligent correspondent of Hon. Senator Yulee gives the following account:

St. Augustine, Fla. Jan. 4, 1846.

Dear Sir: I have satisfied myself perfectly as to the identity of the insect. It is the *Coccus Hesperidum.* I have observed it daily since my own trees have become infested with it, and have frequently examined it with a tolerably good single magnifier. I cannot see more than one male to three or four hundred females. The males are also much smaller than the females. The males are winged, and extremely active, and can be seen running about among the females, by observing very closely. They are, however, so extremely small that the closest attention is necessary to see them at all with the unassisted sight, and then only in a bright sunlight. By means of a microscope that enlarges it to about

Colony. It is a selection from a larger list in the Penny Cyclopædia:

"*Citrus Aurantium, the Sweet Orange varieties.*

"*b.*—The pear-shaped orange, with elliptical, acute leaves, and great top-shaped fruit, with a deep yellow, smooth rind; a rare and curious sort, not known in the market; *it is one of the most capable of resisting cold.*

"*c.*—The orange of Nice, with ovate-acute leaves, and large, thick-skinned, rough, dark yellow, round fruit. This is considered one of the finest of the whole genus, both in regard to beauty, size, productiveness, and quality. It is a good deal cultivated about the town whose name it bears.

"*h.*—The sweet-skinned orange, with broad, taper-pointed leaves, roundish, rather ovate, heavy fruit, and a deep yellow, smooth, thick, sweet, soft rind. This is the Pomme d'Adam, or forbidden fruit of the shops of Paris. Its pulp is subacid and pleasant, and as deep a yellow as the rind, which is soft and melting like the flesh of a clingstone peach; the acidity of the pulp is agreeably mixed with sweetness, which renders the fruit extremely pleasant. This is very different from the forbidden fruit of the London shops, (which is the citrus decumana, the shaddock.)

"*i.*—The Mandarin orange, with flattened, rough, deep-orange fruit, and a thin rind, which separates spontaneously from the pulp. This sort has been raised in China, where its fruit is chiefly consumed in presents to the great officers of State, whence its name. It is now cultivated in Malta, where it arrives at perfection. Its singularity consists in the rind so completely separating from the pulp when quite ripe, that the latter may be shaken about in the inside. *In quality this yields to no known kind.* There are two subvarieties.

"*k.*—The Saint Michael orange, with small, round, pale-yellow, seedless fruit, having a thin rind, and an extremely sweet pulp. This, when in a state of perfection, is perhaps *the most delicious of all oranges, and it is by far the most productive.* Great quantities are imported from the Azores, where it appears to be exclusively cultivated as an object of trade. It is said that 20,000 of these oranges have been packed from a single tree, exclusively of the large quantity which were blown down or rejected as unfit for sale."

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an inch in length, the male exhibits six legs, wings, and bristles on the abdomen. My microscope not being achromatic, I cannot tell what its color is. This male is seldom observed, from its diminutive size, and when it is shown to people, appears so very unlike the scaly, torpid female, that few persons can be made to believe it to be the same insect. Those females which are too small to be seen at all by the naked eye, are seen to crawl slowly under the magnifier. The smallest that can be seen at all, appear of a reddish color.—But you solicited information concerning its introduction here; and I have been detailing, I find, the result of my observation of its appearance and habits.

I will premise that the insect is not a native of Europe, but was originally introduced there with exotic plants, from warm climates, (the East Indies or China.) It is now to be found in almost every hot-house in Europe or America, introduced with plants from one to the other.

In 1838, Robison, of Mandarin, on the St. John's, introduced the insect there, on some *Mandarin* (Chinese) orange trees which he received from New-York. The insect excited little apprehension at first. But in 1840 it had extended its ravages so rapidly that Robison, in the autumn of this year determined to top all his trees, in hope of thereby arresting its progress. But this had no effect whatever.*

No soil, no kind of manuring or attention to culture can arrest it. Its ravages on St. John's, where a *sandy loam* prevails, are as great as they are here, where a *calcareous sandy* soil exists. No storms or seasons seem to arrest its progress, until all the orange trees are destroyed, The same insect in lots where it has destroyed all the orange trees, has betaken itself to the English Joy and prickly ash.

I have scarcely room left to express myself, respectfully, but devotedly and sincerely, yours,

J. FORMAN.

Hon. D. L. YULEE.

* From this beginning it has gradually spread over the greater part of Florida.

A PICKLE FOR ONE HUNDRED POUNDS OF BEEF—*(From the Book of the distinguished* RICHARD STOCKTON *of New-Jersey.)*—First put your beef for 10 hours in water, to drain out the blood; then hang it up 34 hours to dry. Dissolve in 6 gallons of warm water coarse salt so as to make the brine bear an egg; add ¾ of a pound of saltpetre, 2 quarts of molasses, 2 ounces of cayenne pepper, 1 ounce of pearl ash—dissolved in warm water; boil and skim off all the impurities; then put in the beef in this pickle, and in 4 or 5 days it will be fit for use, and continue so until April—after which, boil over the liquor; skim it after you have added some more salt, sugar, &c.

Some time ago I was at Marshfield, and better salt pork, or better salt beef, I never ate The distinguished farmer of that place—as distinguished among his neighbors for his knowledge in Agriculture as he is in the country for his legal talents—told me that the pickle of the fine salt beef and pork I was then eating was 60 years old—that is, some of the pickle of his harness cask was upward of 60 years old—as it had been in use in the Thomas family, from whom he purchased a part of his estate, (regular descendants from the May Flower,) certainly for that period of time; that spring and fall they boiled and skimmed the liquor, and retained it for use. This pickle was not very different from the above, only no pepper, and wood ashes instead of pearl ashes.

TO CORRESPONDENTS.

Our "Friend" in Richmond has put us to the trouble of looking back to see *how* it could be that we had used the phrase "*one* L——;" and we are glad to find that he is mistaken. The language is, that a passenger in the stage answered that the farm belonged to *a Mr. L.* It is quite obvious that anything but disrespect was meant.

The Address did not come to hand. We should, doubtless, be much gratified and edified in reading it. The well-known talents of the author give assurance of that; but we are compelled to forego the publication of addresses generally, for there are as many delivered and offered as would fill the whole journal. We have been long desirous of publishing an extract, at least, from one of the ablest and most useful, in a practical view, that we have seen for many a day, by FRANKLIN MINOR, Esq. If we have published our own, it was in no spirit of vanity, but because we have taken occasion of these invitations to deliver addresses to say only what we had desired, and, with little variation of language, should have said editorially, in any event.

We have an Address, sent expressly for original publication in THE FARMERS' LIBRARY, de livered lately at Woodville, Mississippi. The style is captivating and beautiful, and we should be unaffectedly gratified in publishing as we have been in perusing it; but, after all, it is but an exhortation, in glowing and eloquent language, to the farmers of that region, to contemplate the various productions of Nature, and to learn from them to *diversify* their crops—to lessen the quantity of cotton, and to make more of other things. As a beautiful specimen of composition, the friend who sent it cannot more admire it than we do; but the question is, whether we can yield six precious pages to its insertion.

The source of our deepest and most frequent mortification is the reluctance with which we lay aside so many admirable addresses, and so much of other matter, that we would gladly spread before our readers. Several have been lately delivered in South Carolina, that we should like much to see—one especially, recommending *the culture of the olive*, and which, we suppose, will have been published in the Southern Cultivator, but it is our misfortune lately not to receive that very able paper. When we can't publish an address, we must endeavor to make extracts. Dr. Bayne's is an excellent one—but were that published it might be ascribed to improper considerations.

A JUDICIOUS PREMIUM.—The Highland and Agricultural Society of Scotland have offered a premium of a silver medal to the *best sheep-shearer*, in each of the districts in which the Society's or local premiums for sheep are in operation. There is nothing in which there is more of what is called sleight-of-hand than in sheep-shearing. The whole economy of sheep husbandry is little understood and badly followed in a great portion of the United States. How many sheep will an expert shepherd shear in a day? How would this operation be accomplished in case of very large flocks, say flocks of 10,000, which some have contemplated in Texas and elsewhere?

☞ We entreat our friends throughout the country to open and encourage discussion on the *rights of Agriculture, above all interests, to instruction out of the public means.* Let discussion be opened in the local papers, and memorials gotten up to the Legislatures of States—*more especially is this the duty of Agricultural Clubs and Societies and Institutes.* Now let us see whether any heed will be paid to *this* matter of *plain, obvious, and almost incalculable importance.* As we have elsewhere said, if a man's son unluckily fall and break his leg, he employs the best surgical aid to have it set right and straight. Is it not equally the duty of us all to do what we can to keep the minds of the rising generation of cultivators of the soil from all the feebleness and deformity which can be prevented by instruction in the arts and sciences that may enlighten them in the prosecution of the pursuit by which they are to *live* or *starve!*

THE HEREFORD COW.

It is proper to say of the portrait in this number, of Mr. Corning's cow, Matilda, that it has been very faithfully copied from a painting done under his direction—and which, we think, does credit to the very meritorious artist, Mr. Van Zant.

It may be that the cow—a superb one of her breed—is not *made up to order*. The portrait is what it purports to be, and what all portraits should be, but what not many are—a *likeness*, and not a fancy sketch—paring off redundancies, and supplying defects, to make up something a *little better than Nature* can do.—When *she* does her part as well as she has done, almost without any defect or exception, in Mr. Corning's herd of Herefords, for ourselves we should be content to let very well alone. We consider the cow a superior animal of her breed—distingnished particularly, as to color and marks, by those which characterize that breed of cattle.

We have before intimated that, with such a resource as Mr. Corning's herd within reach, it would be folly to send for Hereford cattle to England, where they still maintain their long and sharp contest with the Short-Horns.

One secret of their being so well sustained here in their excellence, now for many years, might be stated if one could state the secret by which Mr. Sotham, like Mr. Webster, never fails to have *crops of Swedes* that would do credit to a *Norfolk English farmer*.

CHAMPION.

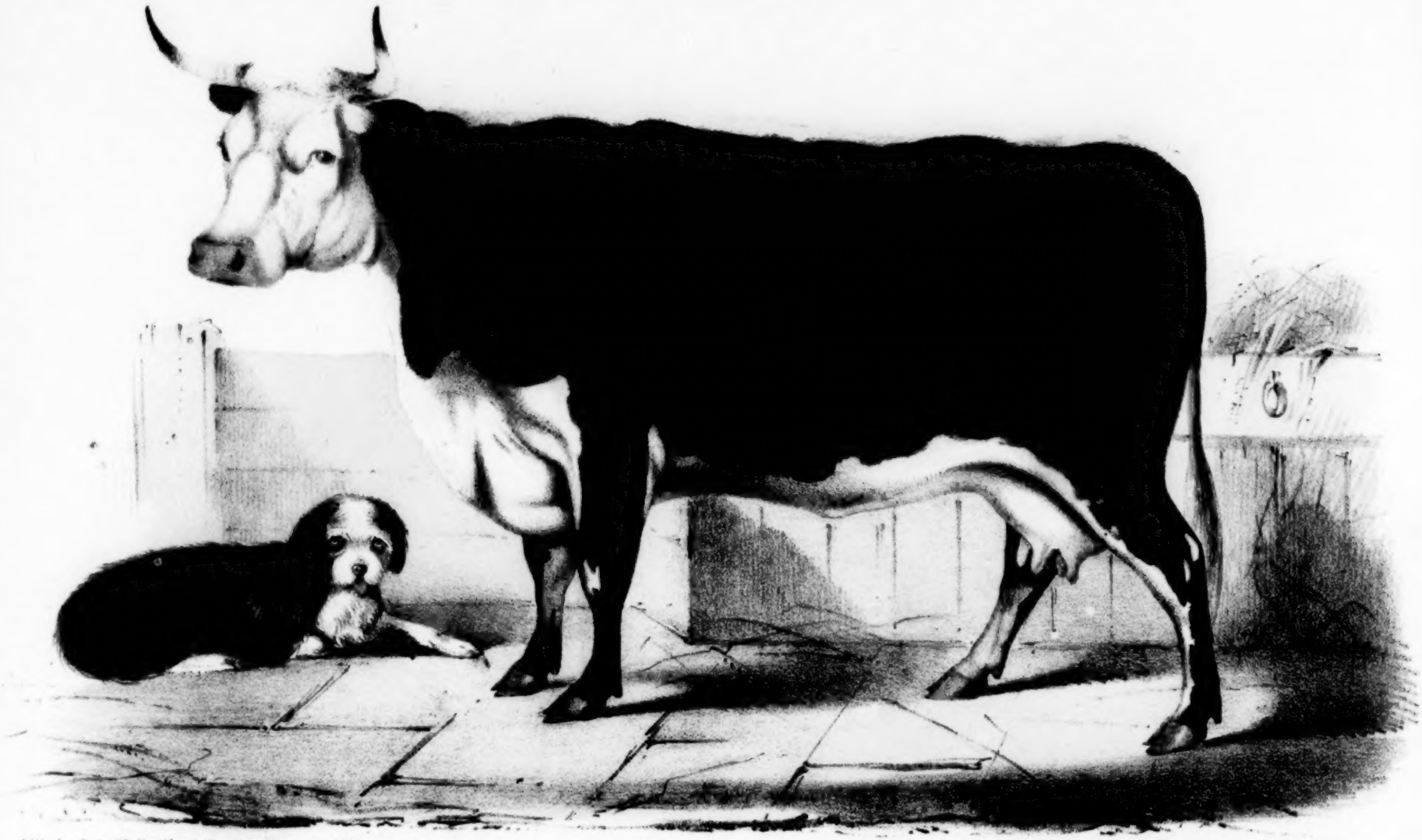
In the last number we gave a portrait of Mr. Grinnell's fine colt—Champion. In the award of the premium, there was no hesitation on the score of his *personal merits*. His size, his blood, and his extraordinary performance—doing his mile in 3.5 at two years old—cleared the way of all difficulty. The Judges *were* judges, and well knew to what a standard a colt like him will fill up, when "of age," and to what a horse of the *Mambrino* stock may be brought, who can do his work at such rate and in such style, when only in the gristle. Trotting stock are usually not fairly taken in hand until they are six. For performance in that gait, the stock of old *Messenger*, coming down through Mambrino, has no rival; and Champion bids fair to stand in the shoes of his world-renowned sire. Saying that, what more need be said?

Not wishing to draw on his masculine powers prematurely, his owner consents to let him pay his compliments this season to a very limited number of *good* mares, at Levana, Cayuga County, N. Y.

PRICES CURRENT.

[*Corrected, December 23, for the Monthly Journal of Agriculture.*]

ASHES—Pots, 1st sort	℔ 100 lb.	4 62½	@ 4	68¾
Pearls, 1st sort, '46		5 50	@—	—
BEESWAX—American Yellow		— 27	@—	27½
CANDLES—Mould, Tallow	℔ lb.	— 9½	@—	11
Sperm, Eastern and City		— 26	@—	38
COTTON—From	℔ lb.	— 9½	@—	12½
COTTON BAGGING—American		— 10½	@—	13
CORDAGE—American	℔ lb.	— 11	@—	12
DOMESTIC GOODS—Shirtings	℔ y.	— 5	@—	11
Sheetings		— 6½	@—	15
FEATHERS—American, live		— 25	@—	28
FLAX—American		— 7	@—	8
FLOUR & MEAL—Genesee	℔ bbl.	5 50	@ 5	56¼
Troy		5 50	@—	—
Michigan		5 50	@—	—
Ohio, Flat Hoop		5 50	@—	—
Ohio, Round Hoop		— —	@—	—
Ohio, via New-Orleans		— —	@—	—
Pennsylvania		— —	@—	—
Brandywine		5 50	@—	—
Georgetown		5 50	@—	—
Baltimore City Mills		— —	@—	—
Richmond City Mills		6 75	@ 7	—
Richmond Country		5 25	@ 5	37½
Alexandria, Petersburg, &c		5 25	@ 5	37½
Rye Flour		3 87½	@ 4	—
Corn Meal, Jersey and Brand		3 87½	@ 4	—
Corn Meal, Brandywine	hhd.	— —	@17	50
GRAIN—Wheat, White	℔ bush.	1 15	@ 1	20
Wheat, Red		1 02	@ 1	08
Rye, Northern		— 84	@—	—
Corn, Jersey and North	(meas.)	— 78	@—	80
Corn, Southern	(measure)	— —	@—	—
Corn, Southern	(weight)	— 73	@—	78
Oats, Northern		— 38	@—	40
Oats, Southern		— —	@—	—
HAY—North River in bales	℔ 100 lb	— 56	@—	62½
HEMP—American, dew-rotted	ton	95 —	@110	—
" " water-rotted		150 —	@200	—
HOPS—1st sort, 1846		— 9½	@—	11
IRON—American Pig, No. 1		30 —	@32	50
" Common		22 50	@25	—
LIME—Thomaston	℔ bbl.	— 80	@—	—
LUMBER—Boards, N.R.,	℔ M. ft. clr.	30 —	@35	—
Boards, Eastern Pine		— —	@—	—
Boards, Albany Pine	℔ pce.	— 10	@—	18
Plank, Georgia Pine	℔ M. ft.	27 50	@—	—
Staves, White Oak, pipe,	℔ M.	50 —	@—	—
Staves, White Oak, hhd		40 —	@—	—
Staves, White Oak, bbl		30 —	@—	—
Staves, Red Oak, hhd		24 —	@28	—
Hoops		20 —	@30	—
Scantling, Pine, Eastern		15 —	@16	25
Scantling, Oak		30 —	@35	—
Timber, Oak	℔ cubic foot	— 20	@—	30
Timber, White Pine		— 13	@—	20
Timber, Georgia Yellow Pine		— 24	@—	28
Shingles	℔ bunch	1 75	@ 2	—
Shingles, Cedar, 3 feet, 1st quality		26 —	@—	—
Shingles, Cedar, 3 feet, 2d quality		22 —	@24	—
Shingles, Cedar, 2 feet, 1st quality		17 —	@18	—
Shingles, Cedar, 2 feet, 2d quality		15 —	@16	—
Shingles, Cypress, 2 feet		13 —	@14	—
Shingles, Company		28 —	@30	—
MUSTARD—American		— 16	@—	31
NAILS—Wrought, 6d to 20d	℔ lb.	— 10	@—	14
Cut 4d to 40d		— 4	@—	4½
PLASTER PARIS—	℔ ton	2 12½	@ 2	25
PROVISIONS—Beef, Mess,	℔ bbl.	8 —	@ 8	50
Beef, Prime,		6 —	@ 6	50
Pork, Mess, Ohio		10 37½	@10	50
Pork, Prime, Ohio		8 25	@ 8	37½
Lard, Ohio	℔ lb.	— 7	@—	7¾
Hams, Pickled		— 6½	@—	6¾
Shoulders, Pickled		— 4½	@—	5
Sides, Pickled		— —	@—	—
Beef, Smoked	℔ lb.	— 8½	@—	9
Butter, Orange County		— 18	@—	19
Butter, Western Dairy		— 13	@—	15
Butter, Grease		— 6½	@—	7
Cheese, in casks and boxes		— 6½	@—	7½
SEEDS—Clover	℔ lb.	— 6¾	@—	7½
Timothy	℔ tierce	11 —	@15	—
Flax, Rough		9 —	@ 9	25
SOAP—N. York, Brown	℔ lb.	— 3¾	@—	6
TALLOW—American Rendered		— 8½	@—	8¾
TOBACCO—Virginia	@ lb.	— 1¾	@—	5
North Carolina		— 2	@—	4
Kentucky and Missouri		— 2	@—	6
WOOL—Am. Saxony, Fleece,	℔ lb.	— 35	@—	37½
American Full Blood Merino		— 30	@—	32
American ½ and ¾ Merino		— 26	@—	28
American Native and ¼ Merino		— 22	@—	24
Superfine, Pulled		— 25	@—	28



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New York Published by Greeley & Mc Elrath. J. S. SKINNER Edr.

HEREFORD COW, MATILDA,

Six years old the property of Corning & Sotham, Albany, to which was awarded the first Premium at the State Fair at Auburn 1840.